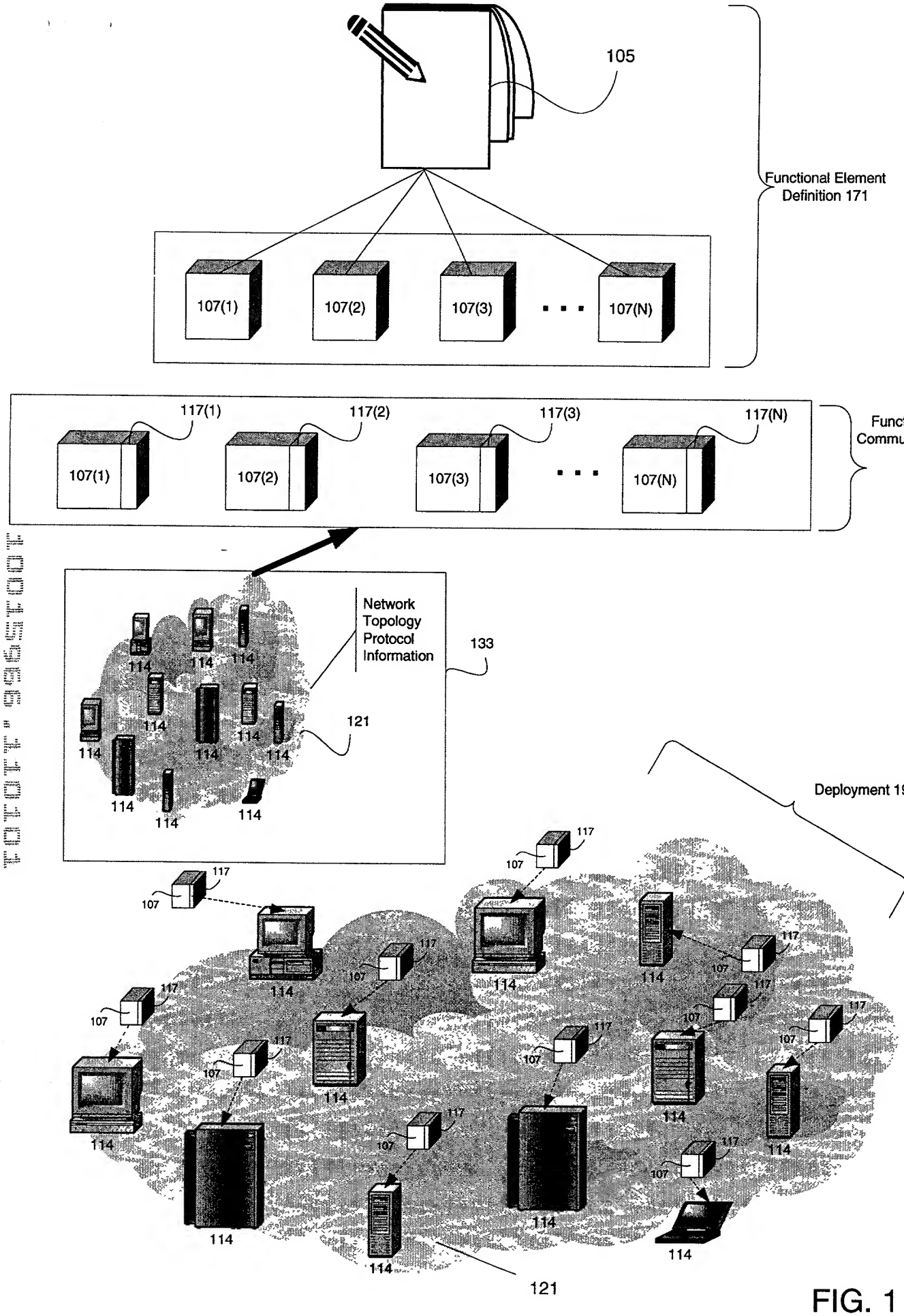
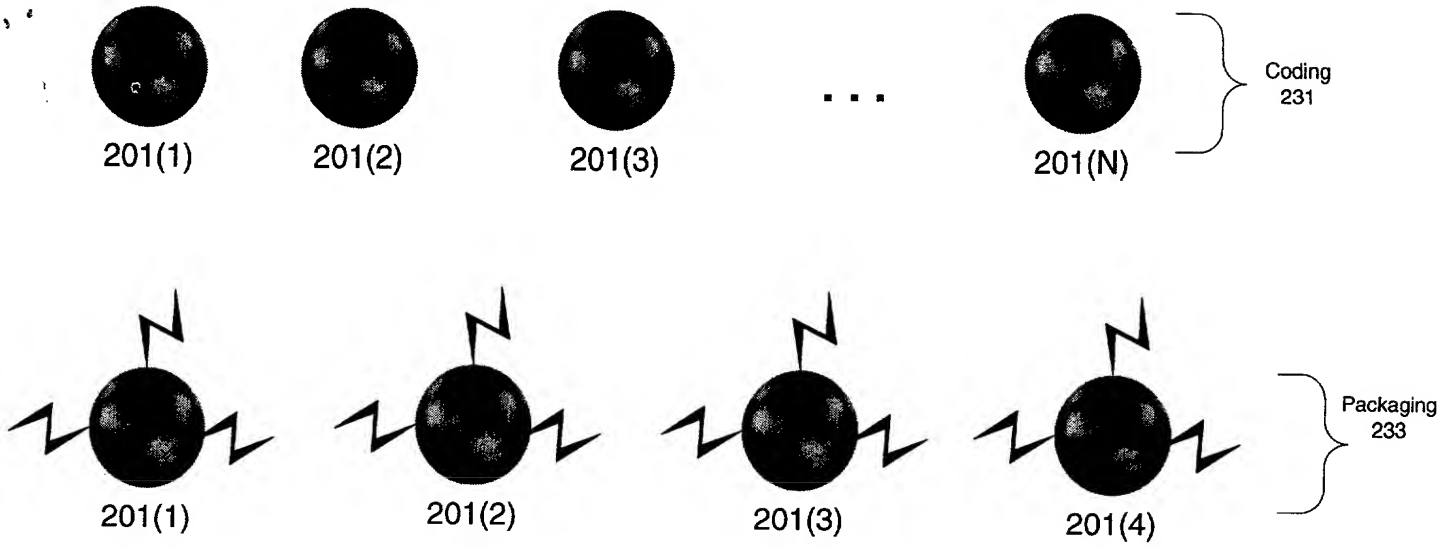

105
Functional Element Definition 171
107(1)
107(2)
107(3)
107(N)
117(1)
117(2)
117(3)
117(N)
Functional Element/ Communication Protocc Coding 181
Network Topology Protocol Information
133
121
Deployment 191
114
117
107
121

FIG. 1


201(1)
201(2)
201(3)
...
201(N)
Coding
231
201(1)
201(2)
201(3)
201(4)
Packaging
233

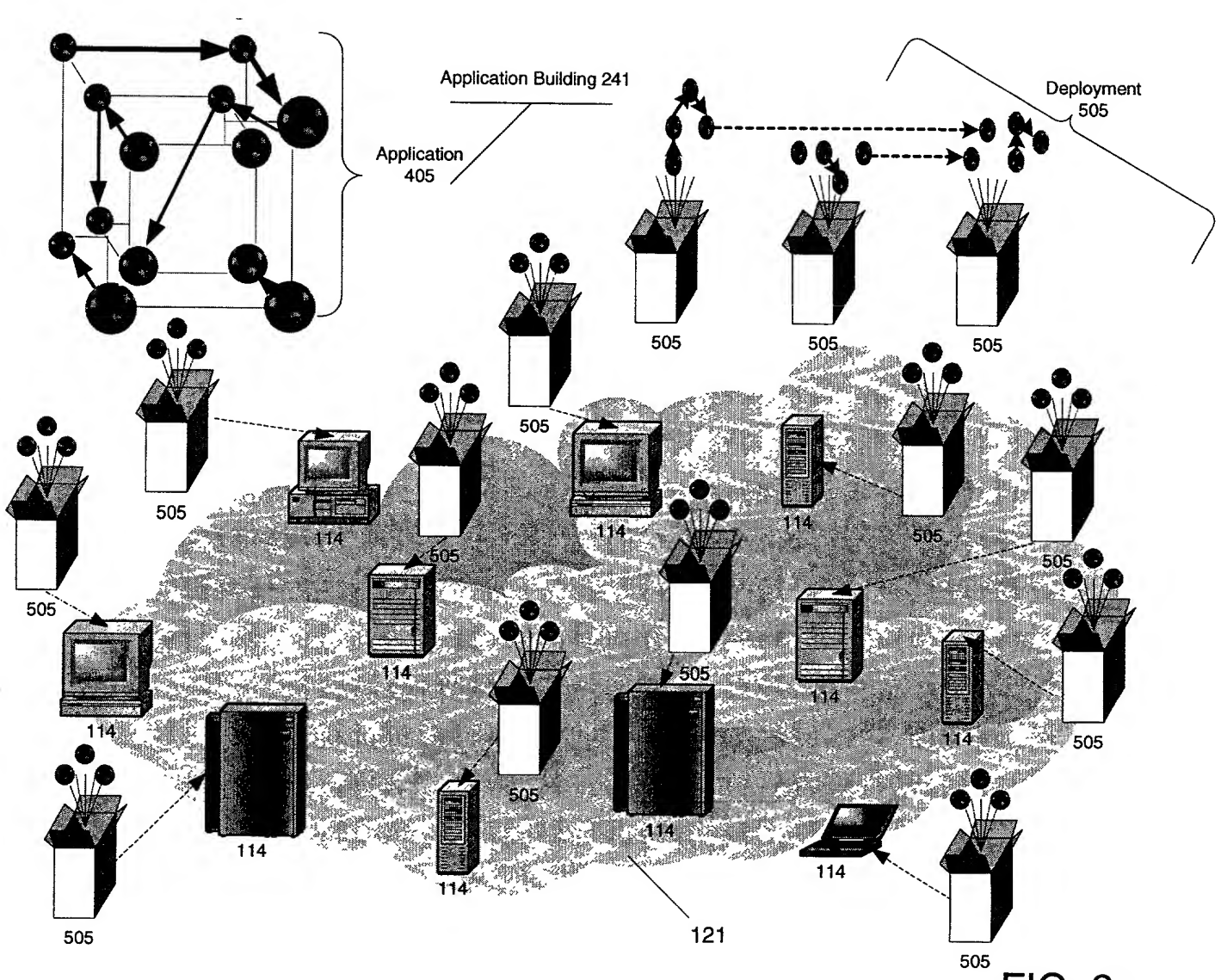

Application Building 241
Application
405
Deployment
505
505
505
505
505
505
505
505
505
505
505
505
505
505
505
505
505
505
505
114
114
114
114
114
114
114
114
114
114
114
121

FIG. 2a

Docket No. 50277-0504

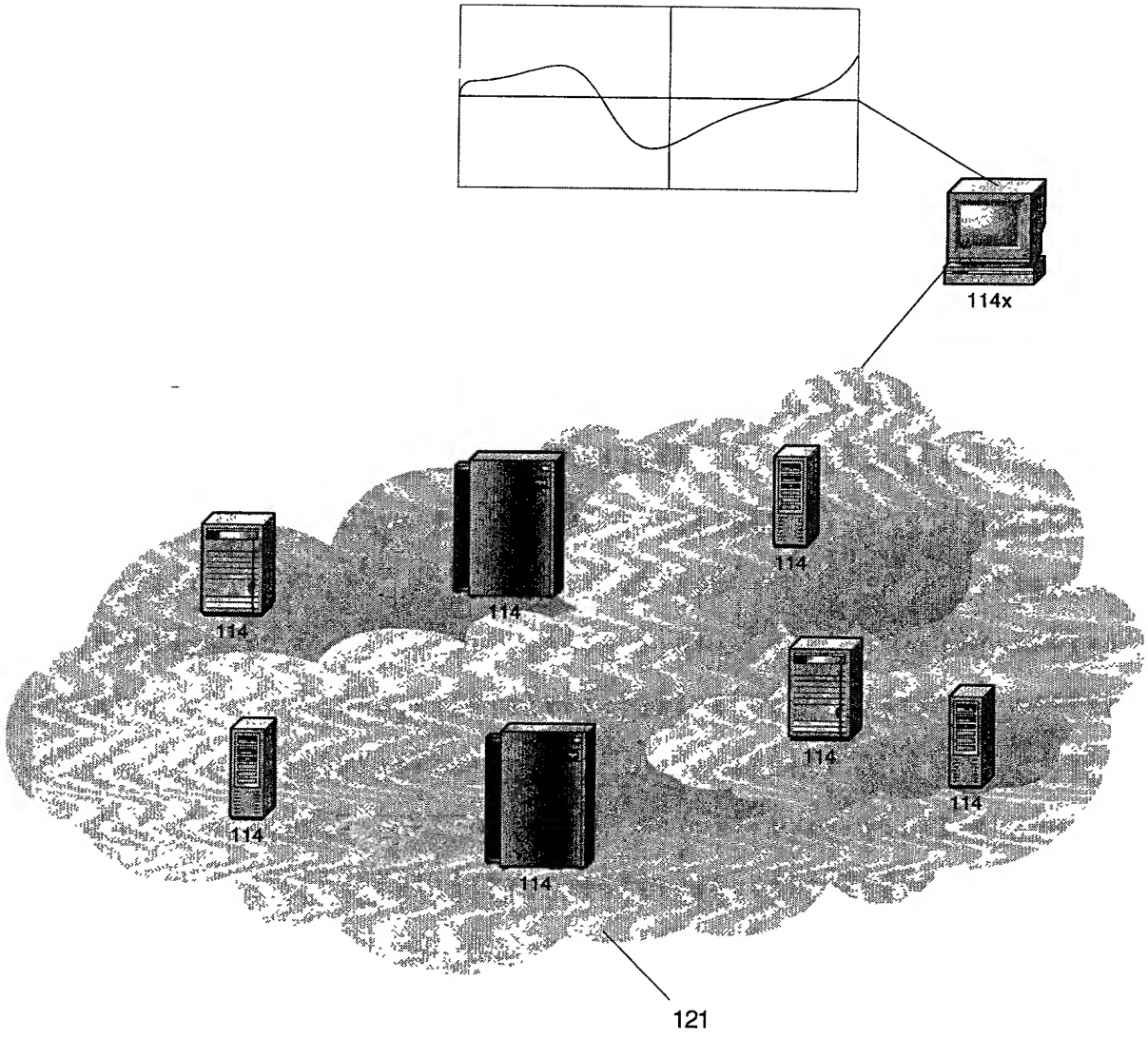


FIG. 2b

4005956.1204

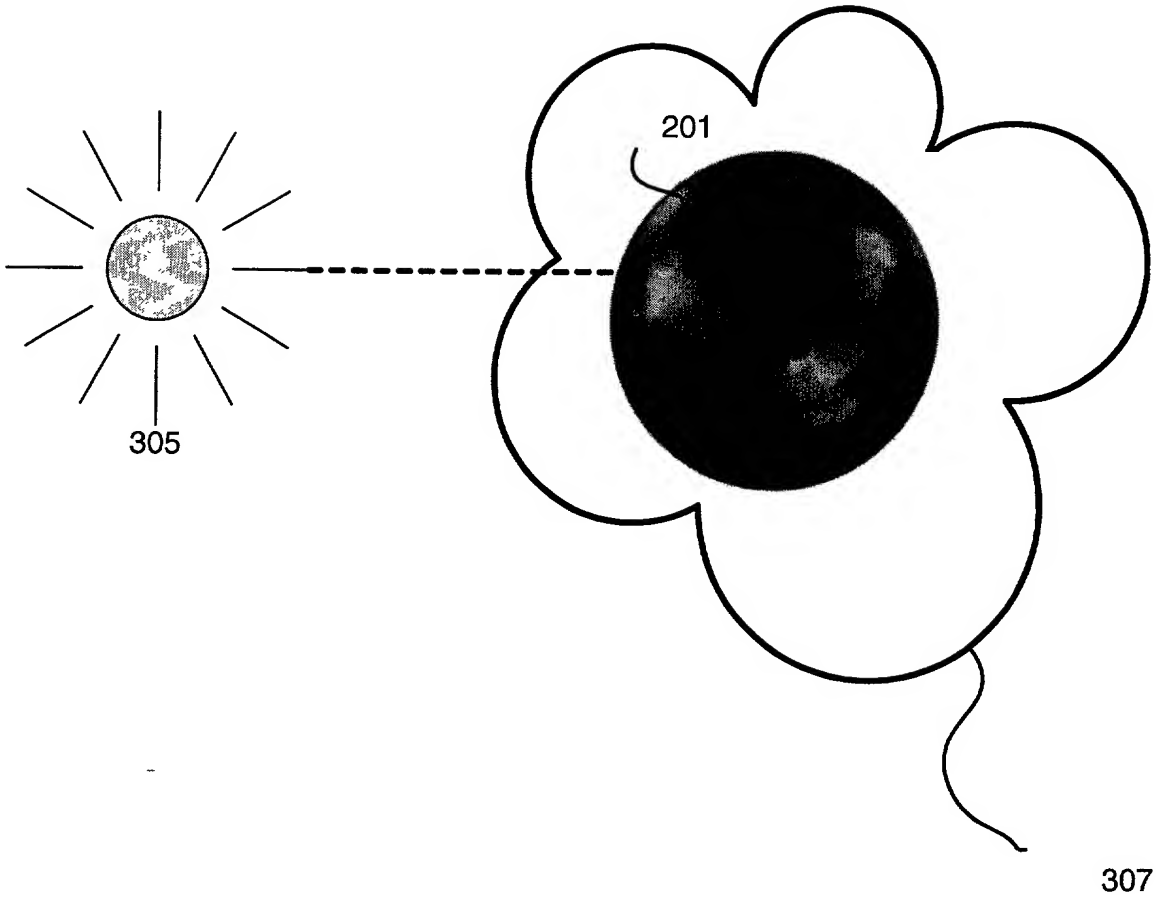


FIG. 3a

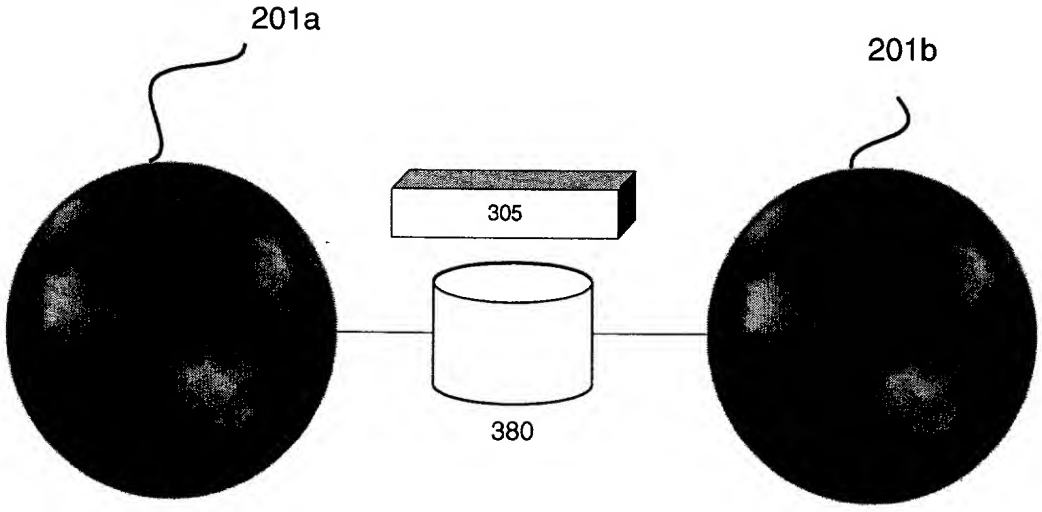


FIG. 3b

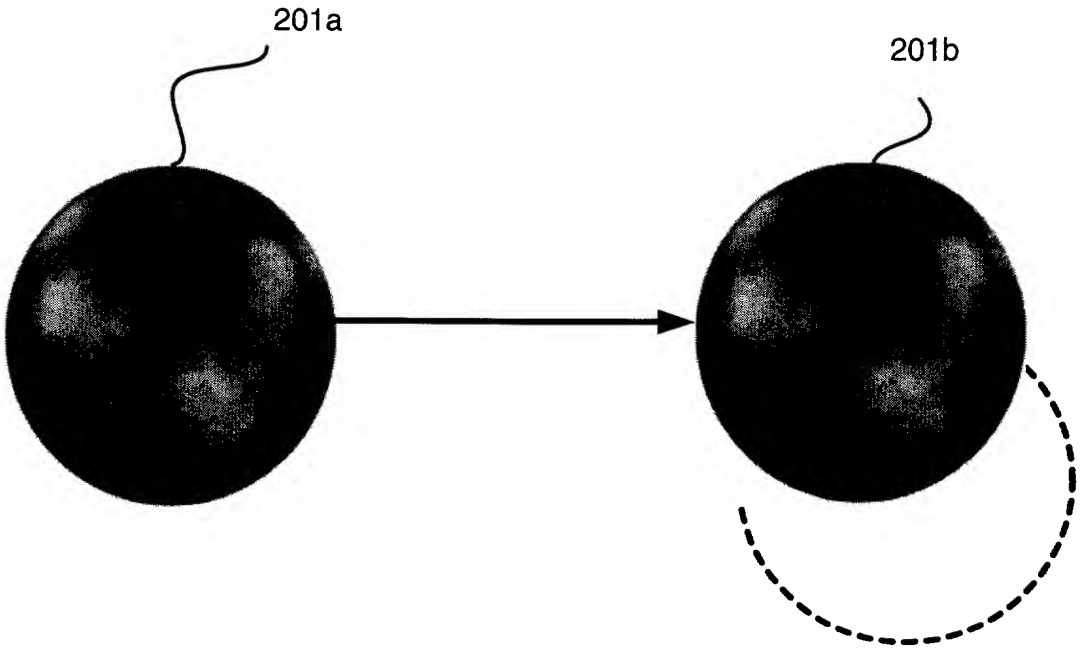


FIG. 3c

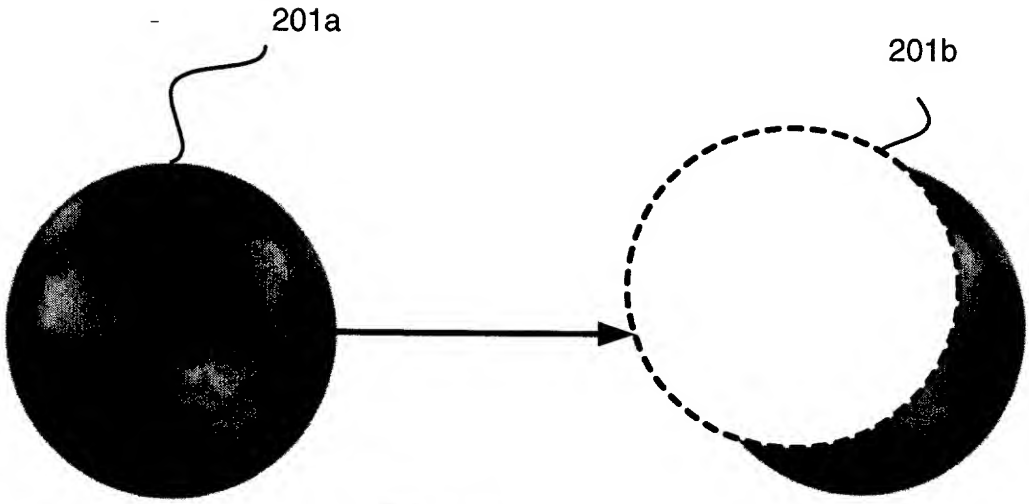


FIG. 3d

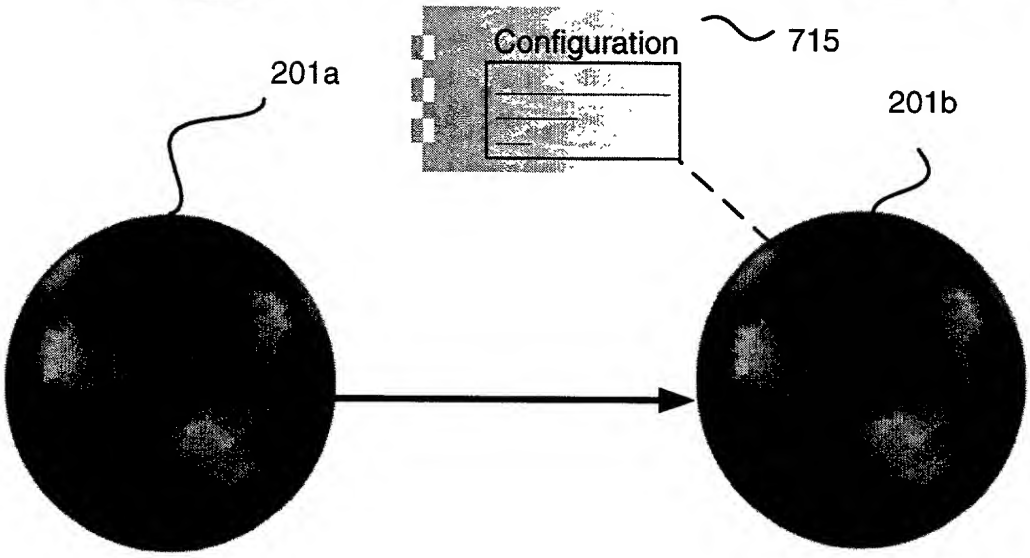


FIG. 3e

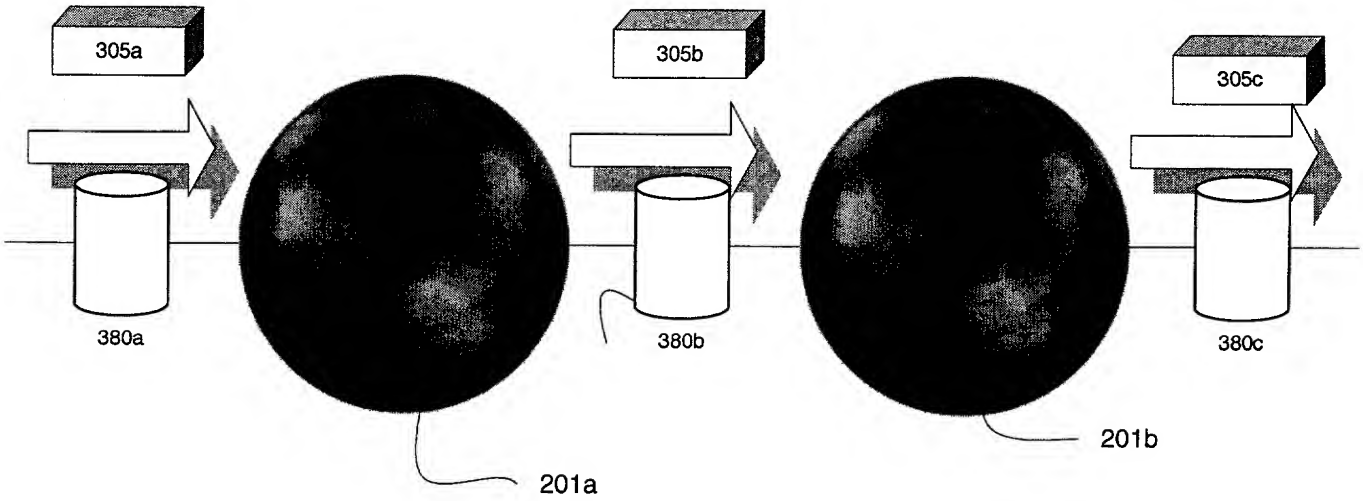


FIG. 3f

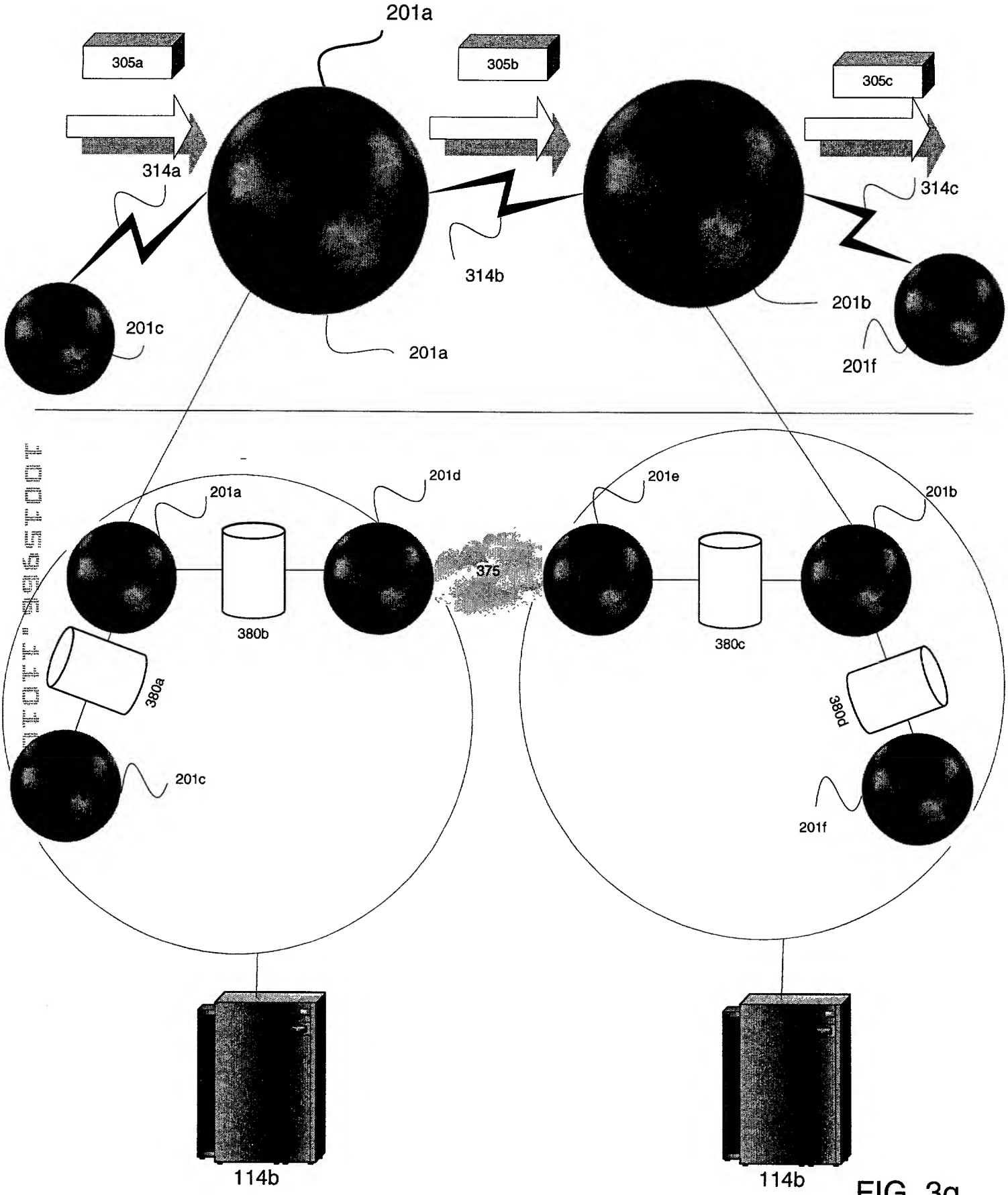

201a
305a
305b
305c
314a
314b
314c
201c
201a
201b
201f
201a
201d
201e
201b
375
380b
380c
380a
380d
201c
201f
114b
114b

FIG. 3g

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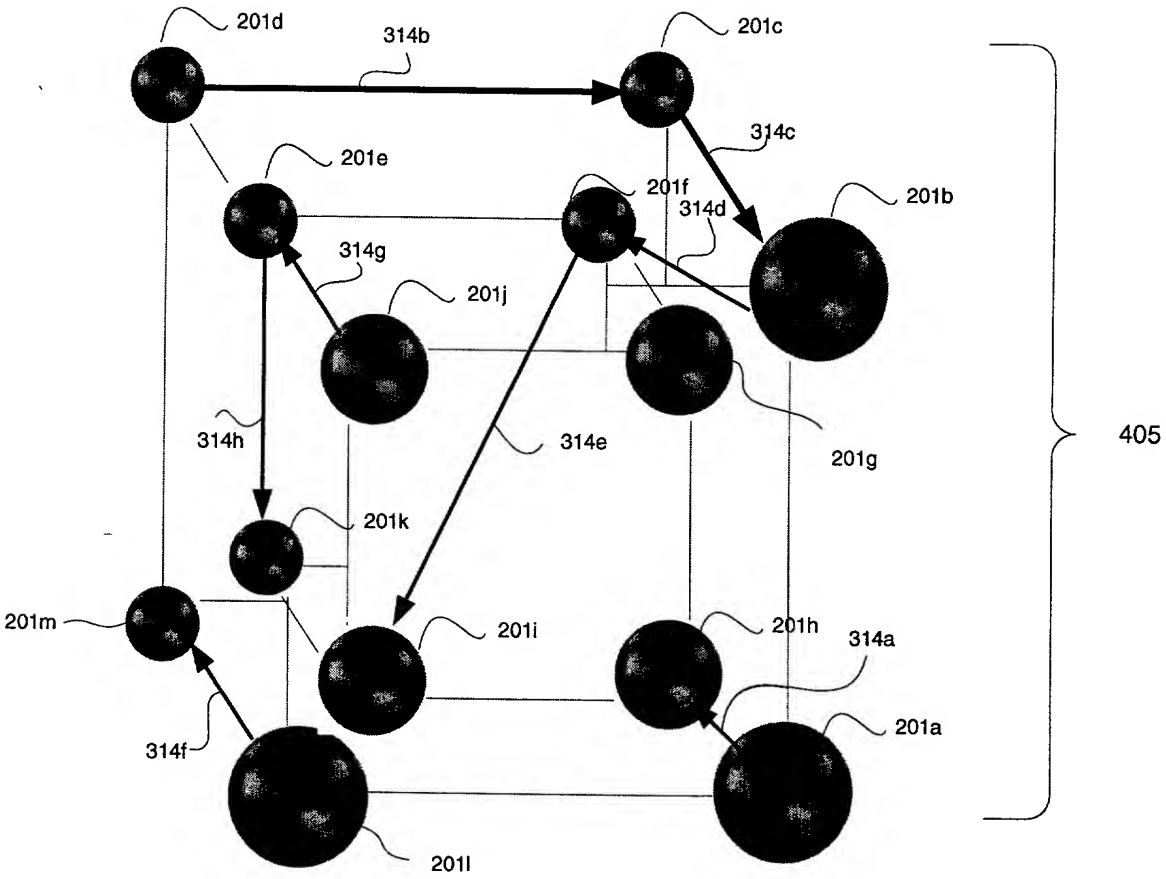

FIG. 4a

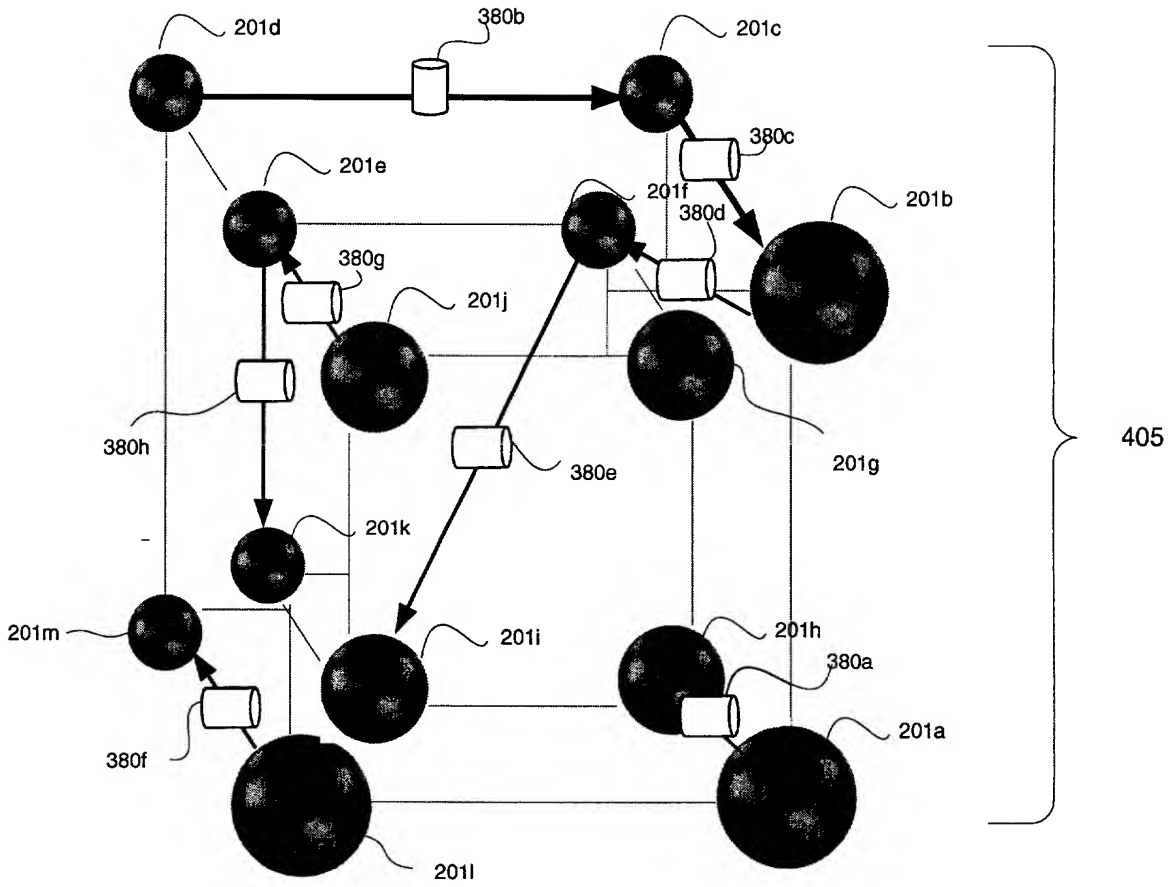
201d
380b
201c
380c
201e
201f
380d
201b
380g
201j
380h
380e
201g
405
201k
201m
201i
201h
380a
380f
201a
201l

FIG. 4b

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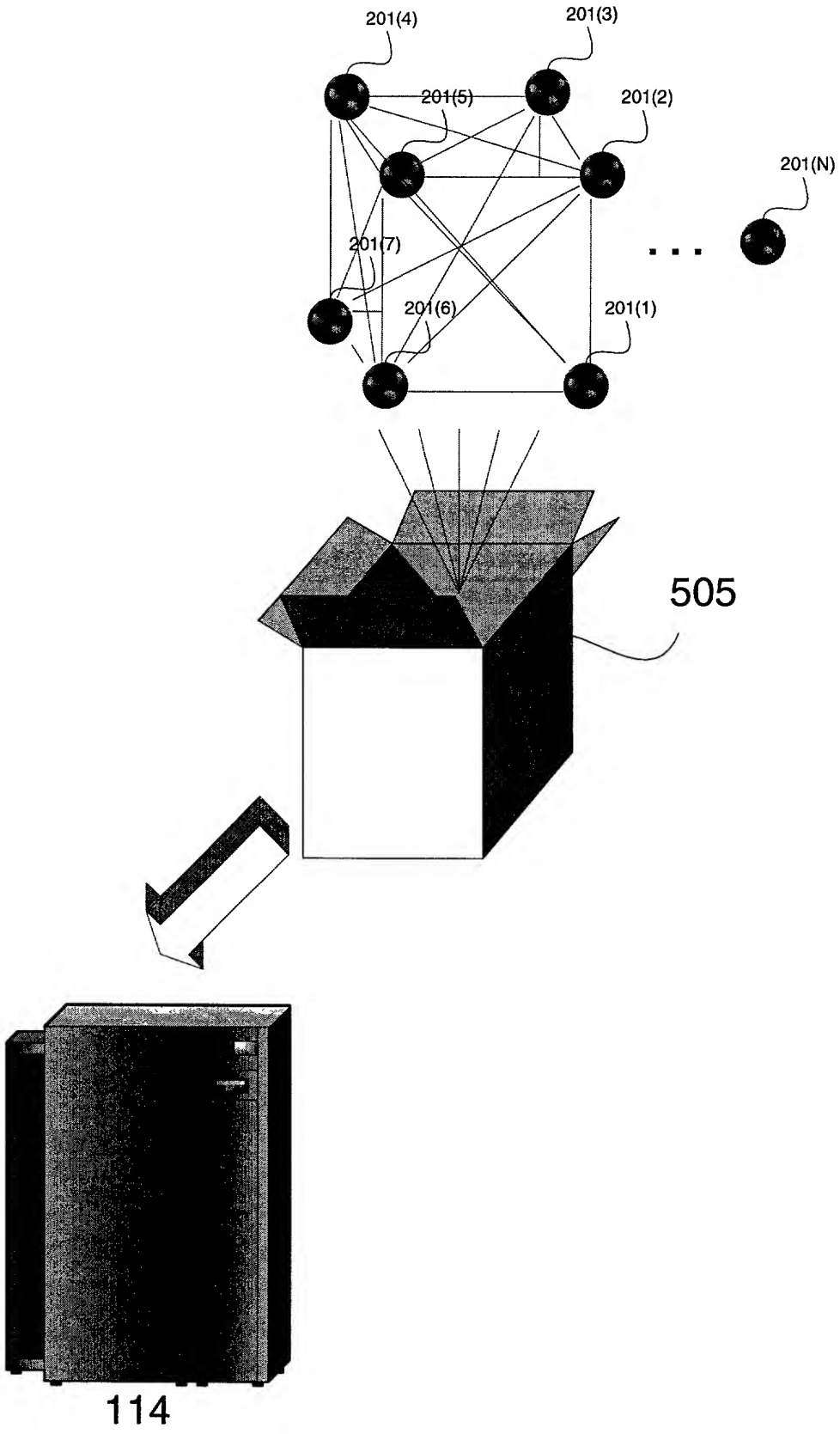
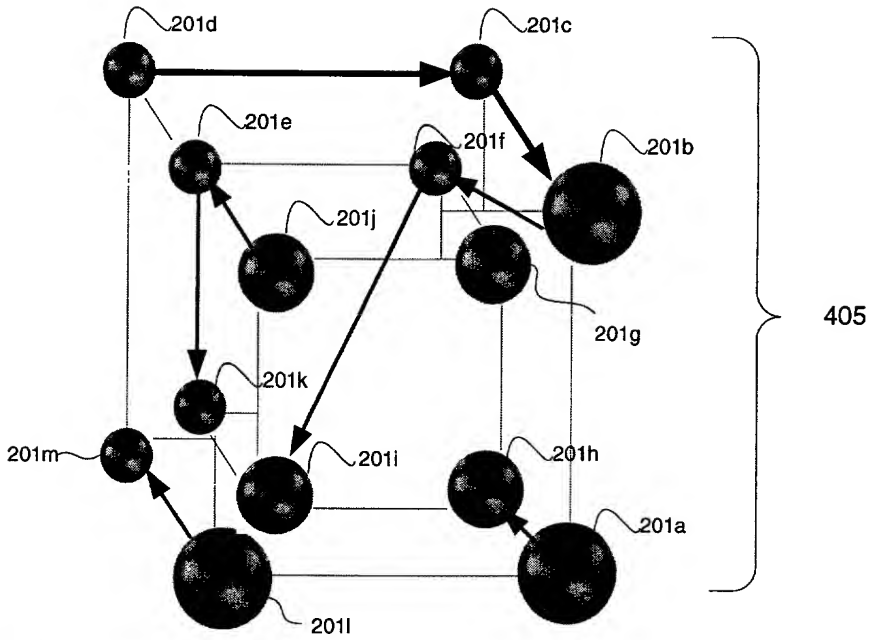
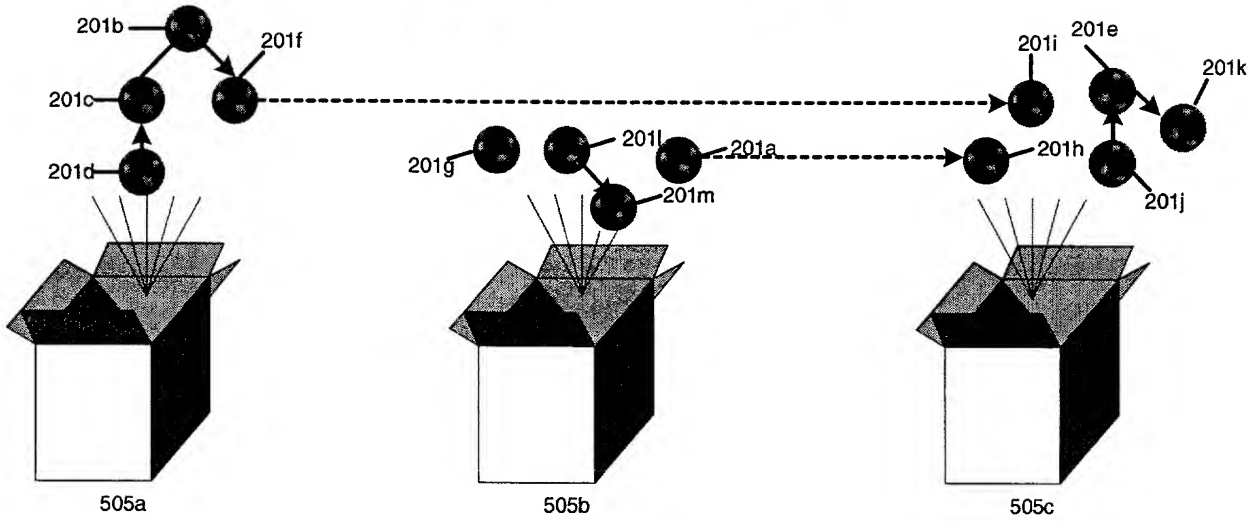


FIG. 5a


201d
201c
201e
201f
201b
201j
201g
405
201k
201m
201i
201h
201a
201l


201b
201f
201c
201d
505a
201g
201l
201a
201m
505b
201i
201e
201k
201h
201j
505c

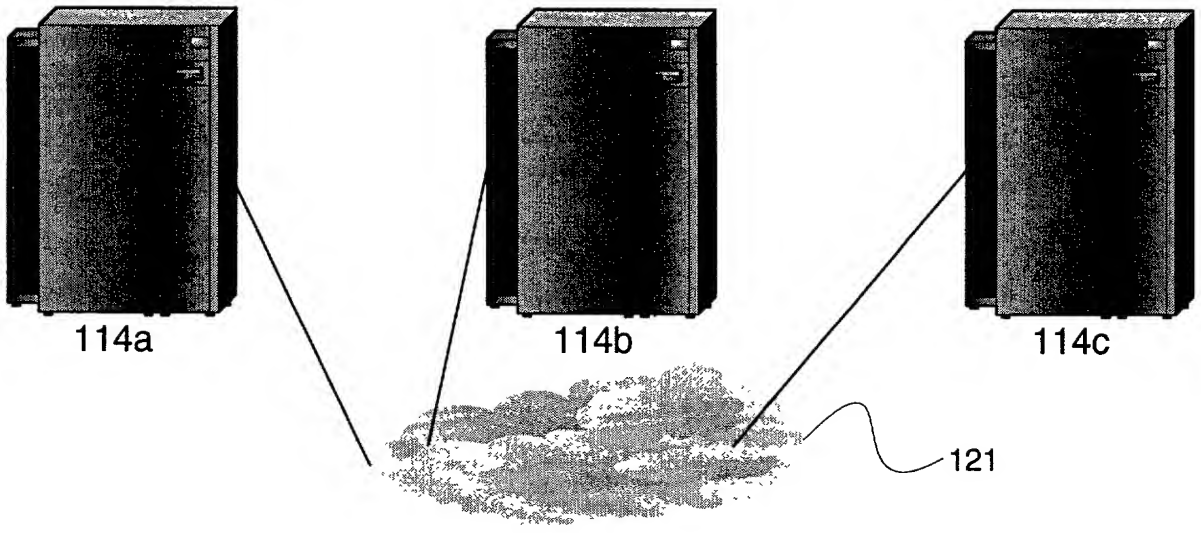

114a
114b
114c
121

FIG. 5b

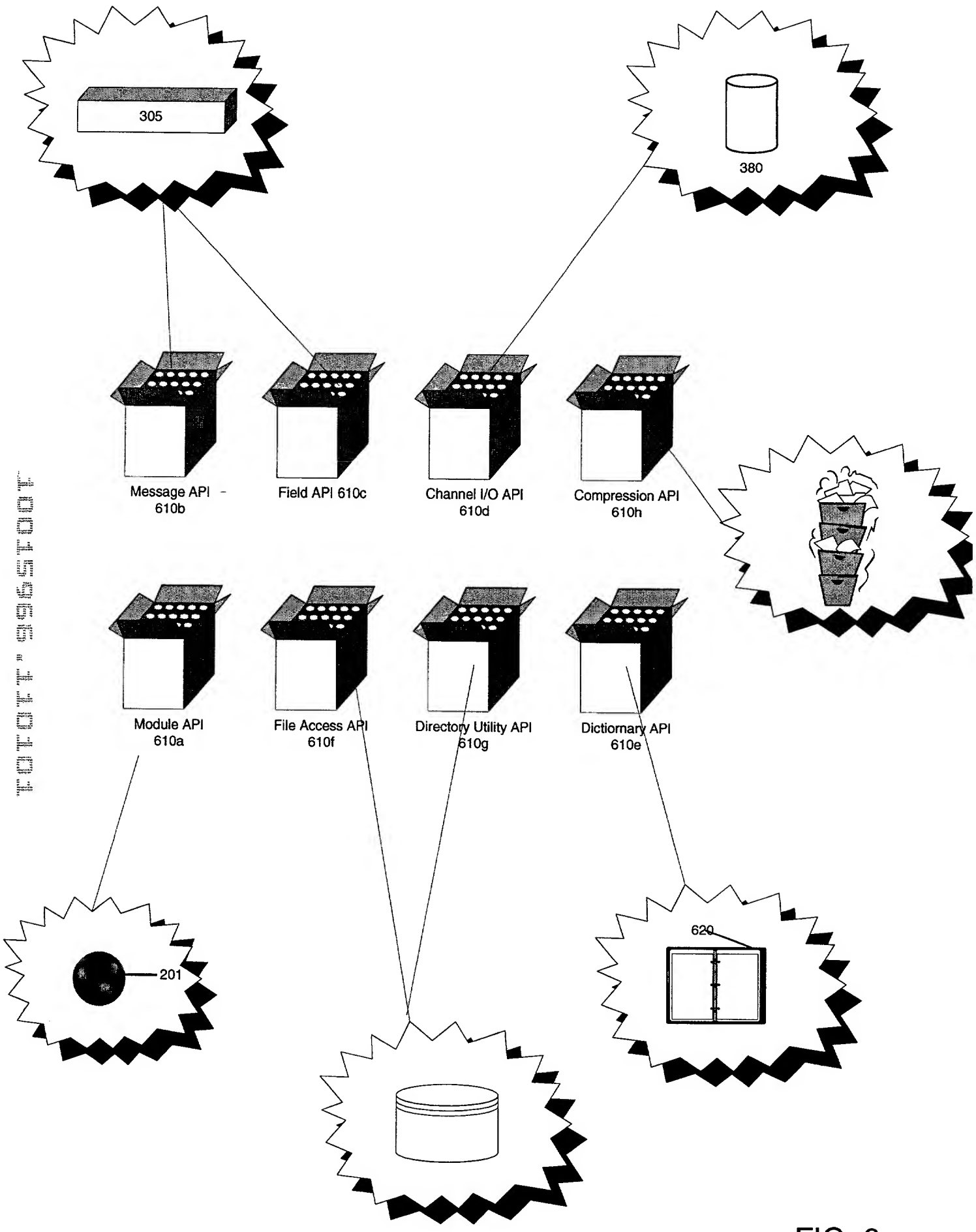

305
380
Message API
610b
Field API 610c
Channel I/O API
610d
Compression API
610h
Module API
610a
File Access API
610f
Directory Utility API
610g
Dictionary API
610e
201
620

FIG. 6

7004595 - 4/9/04

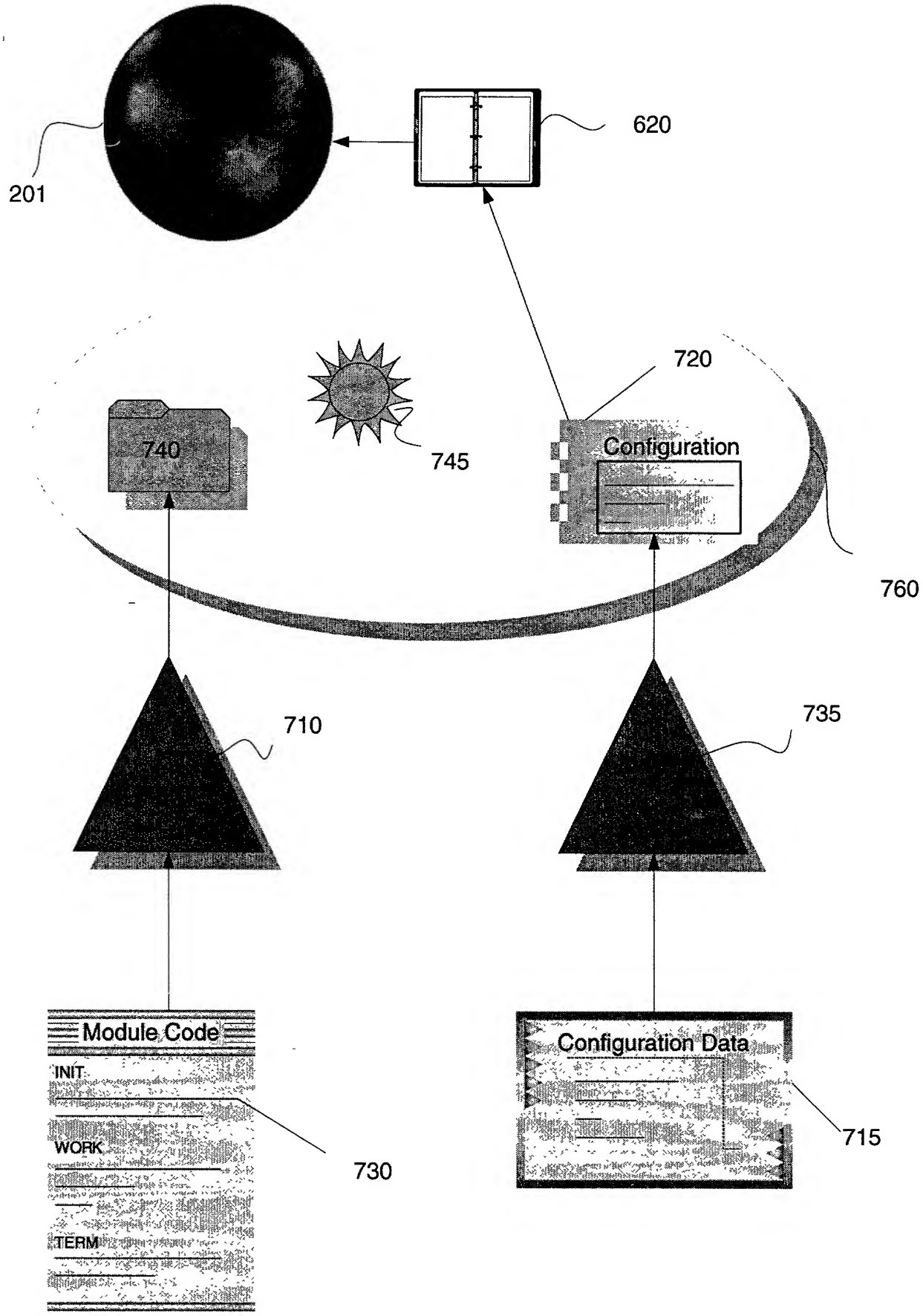


FIG. 7

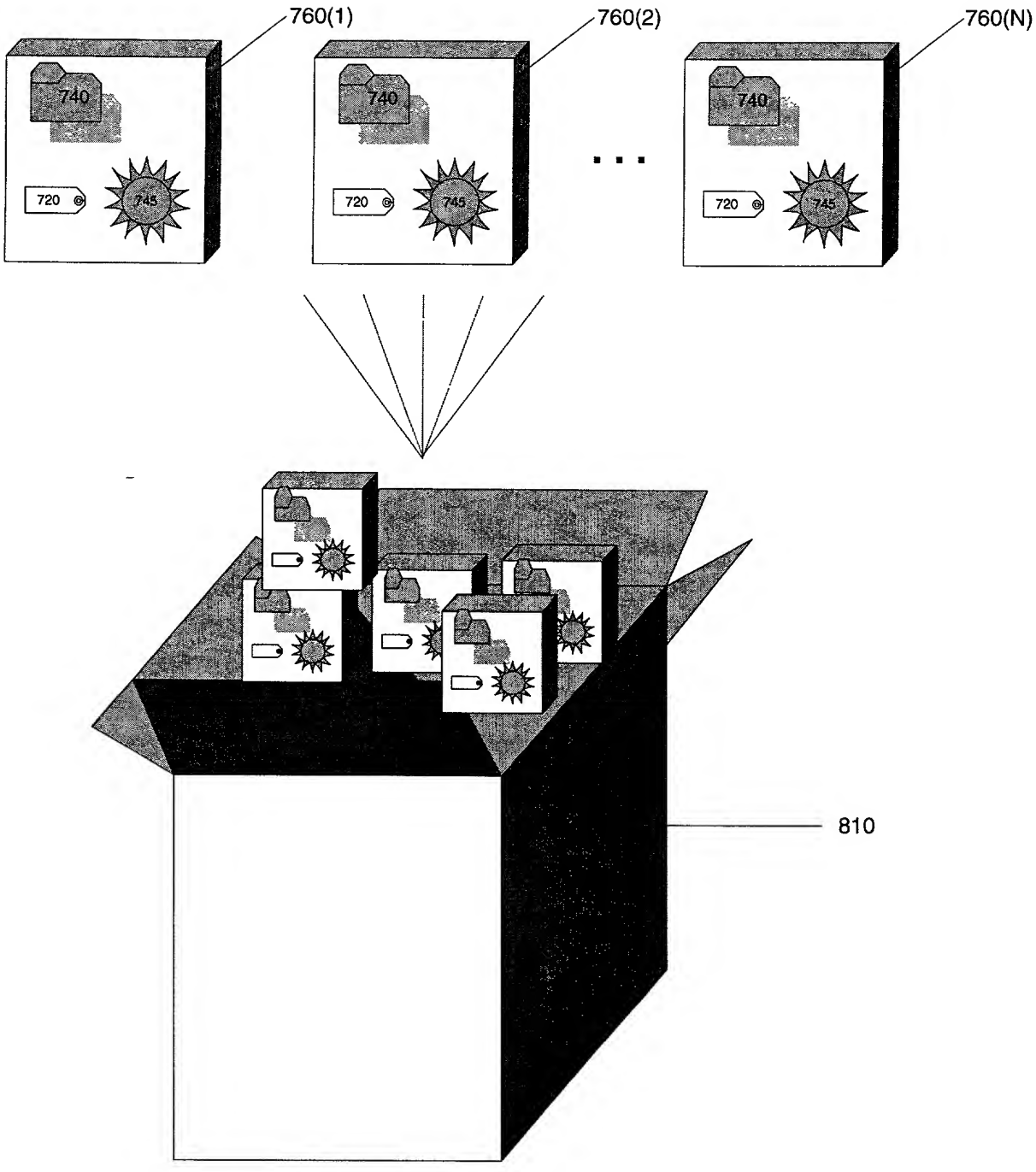


FIG. 8

Patent Application Publication

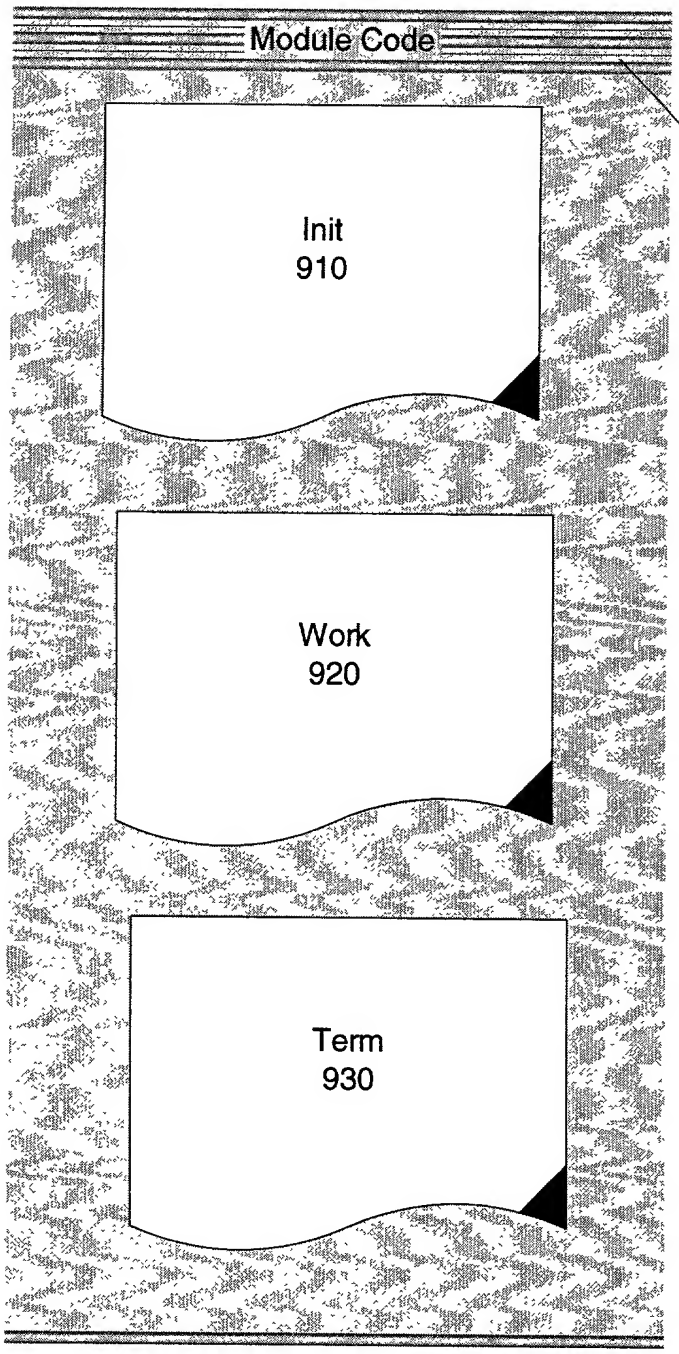


FIG. 9a

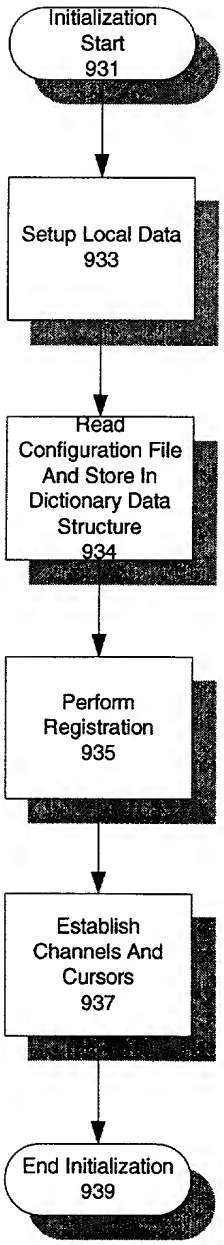

Initialization Start 931
Setup Local Data 933
Read Configuration File And Store In Dictionary Data Structure 934
Perform Registration 935
Establish Channels And Cursors 937
End Initialization 939

FIG. 9b

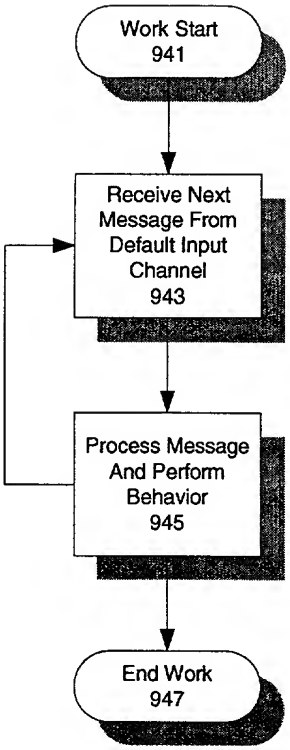

Work Start
941
Receive Next Message From Default Input Channel
943
Process Message And Perform Behavior
945
End Work
947

FIG. 9c

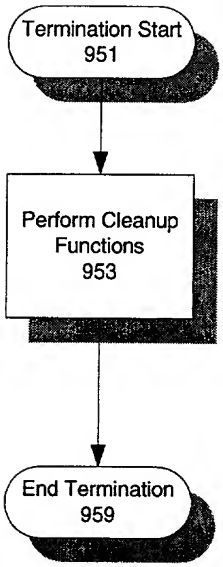

Termination Start
951
Perform Cleanup
Functions
953
End Termination
959

FIG. 9d

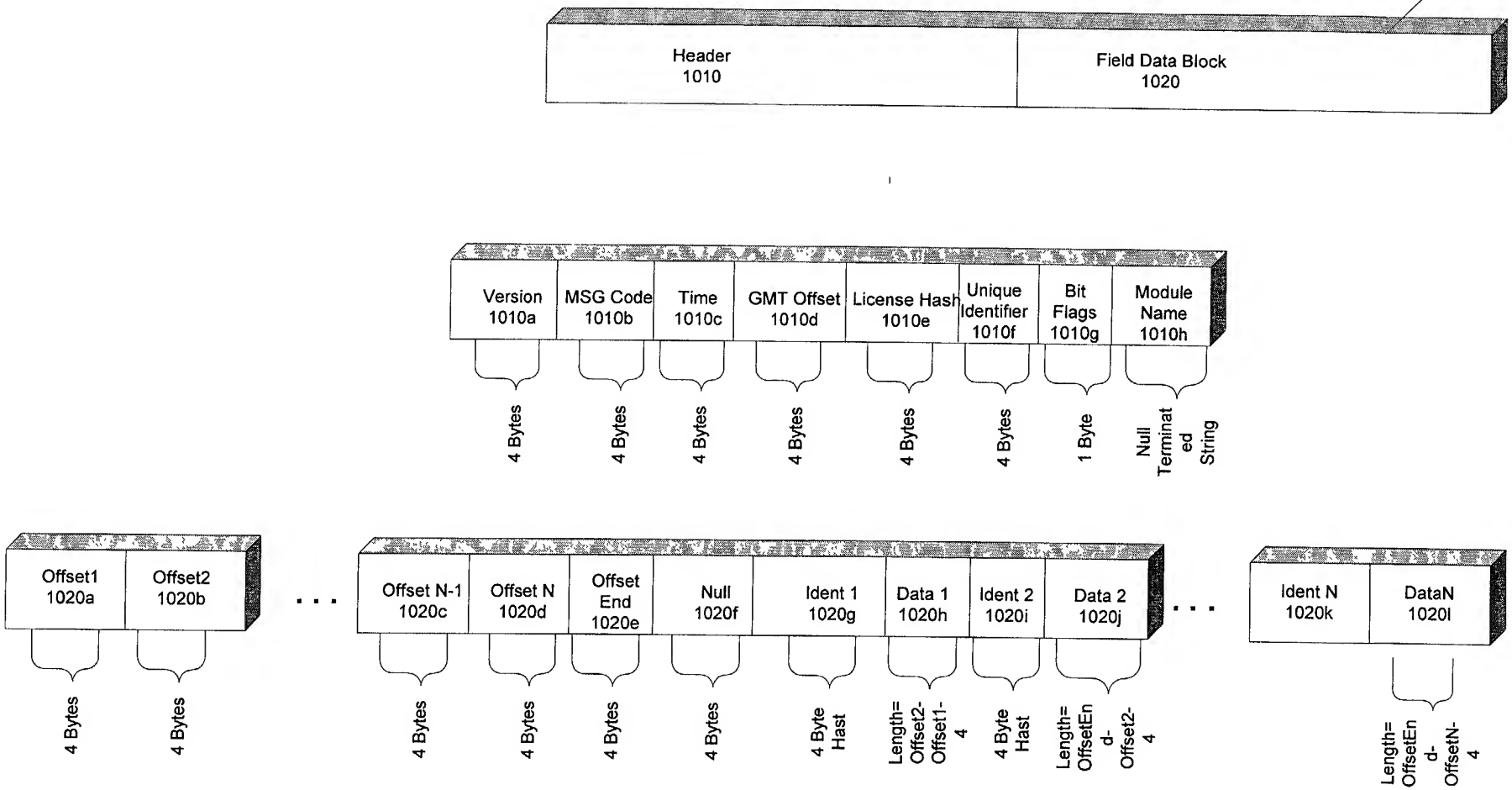

Header
1010
Field Data Block
1020
Version
1010a
MSG Code
1010b
Time
1010c
GMT Offset
1010d
License Hash
1010e
Unique Identifier
1010f
Bit Flags
1010g
Module Name
1010h
4 Bytes
4 Bytes
4 Bytes
4 Bytes
4 Bytes
4 Bytes
1 Byte
Null Terminated String
Offset1
1020a
Offset2
1020b
Offset N-1
1020c
Offset N
1020d
Offset End
1020e
Null
1020f
Ident 1
1020g
Data 1
1020h
Ident 2
1020i
Data 2
1020j
Ident N
1020k
DataN
1020l
4 Bytes
4 Bytes
4 Bytes
4 Bytes
4 Bytes
4 Byte Hast
Length= Offset2-Offset1-4
4 Byte Hast
Length= OffsetEnd-Offset2-4
Length= OffsetEnd-OffsetN-4

FIG. 10

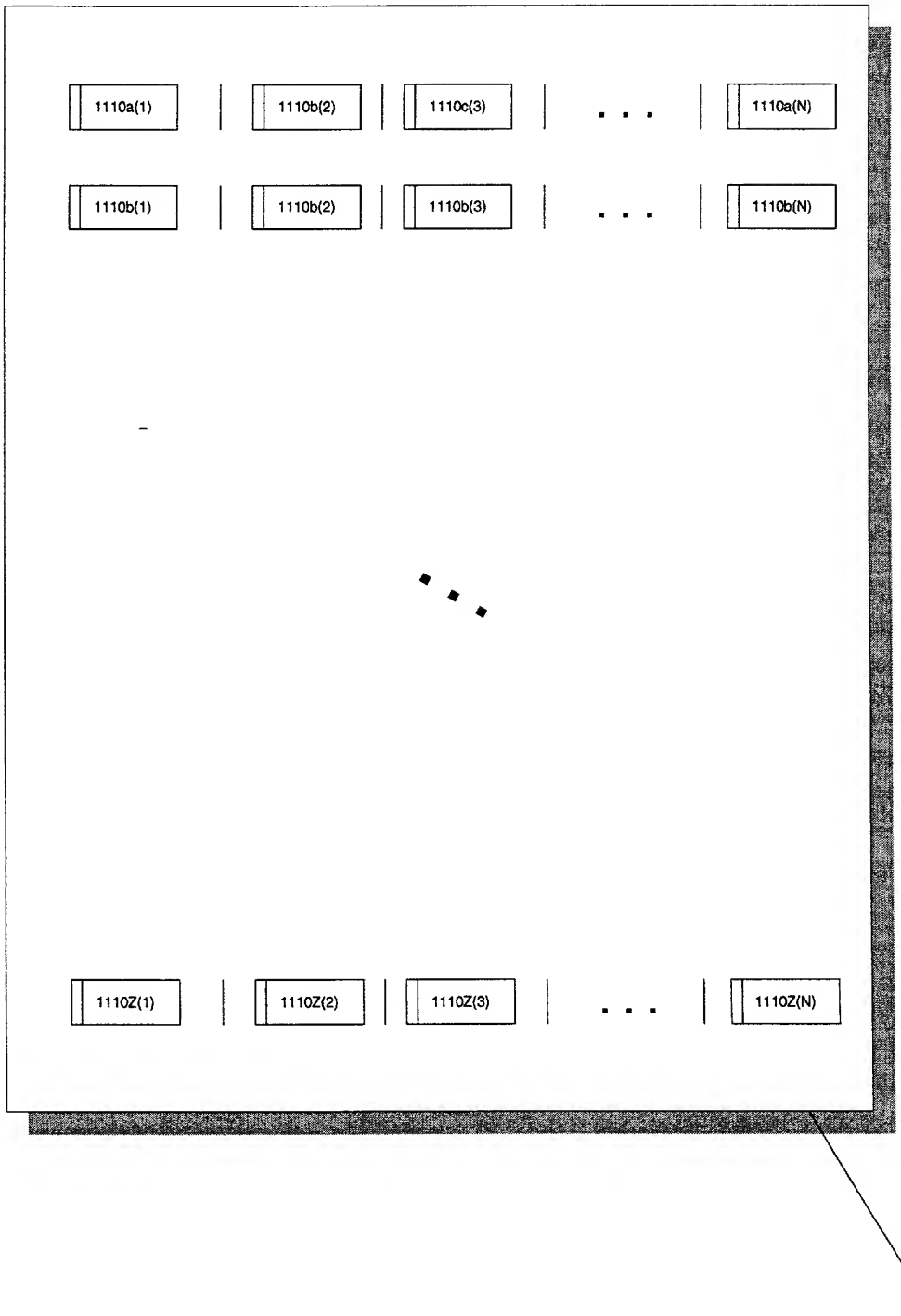

1110a(1)
1110b(2)
1110c(3)
1110a(N)
1110b(1)
1110b(2)
1110b(3)
1110b(N)
1110Z(1)
1110Z(2)
1110Z(3)
1110Z(N)
720

FIG. 11

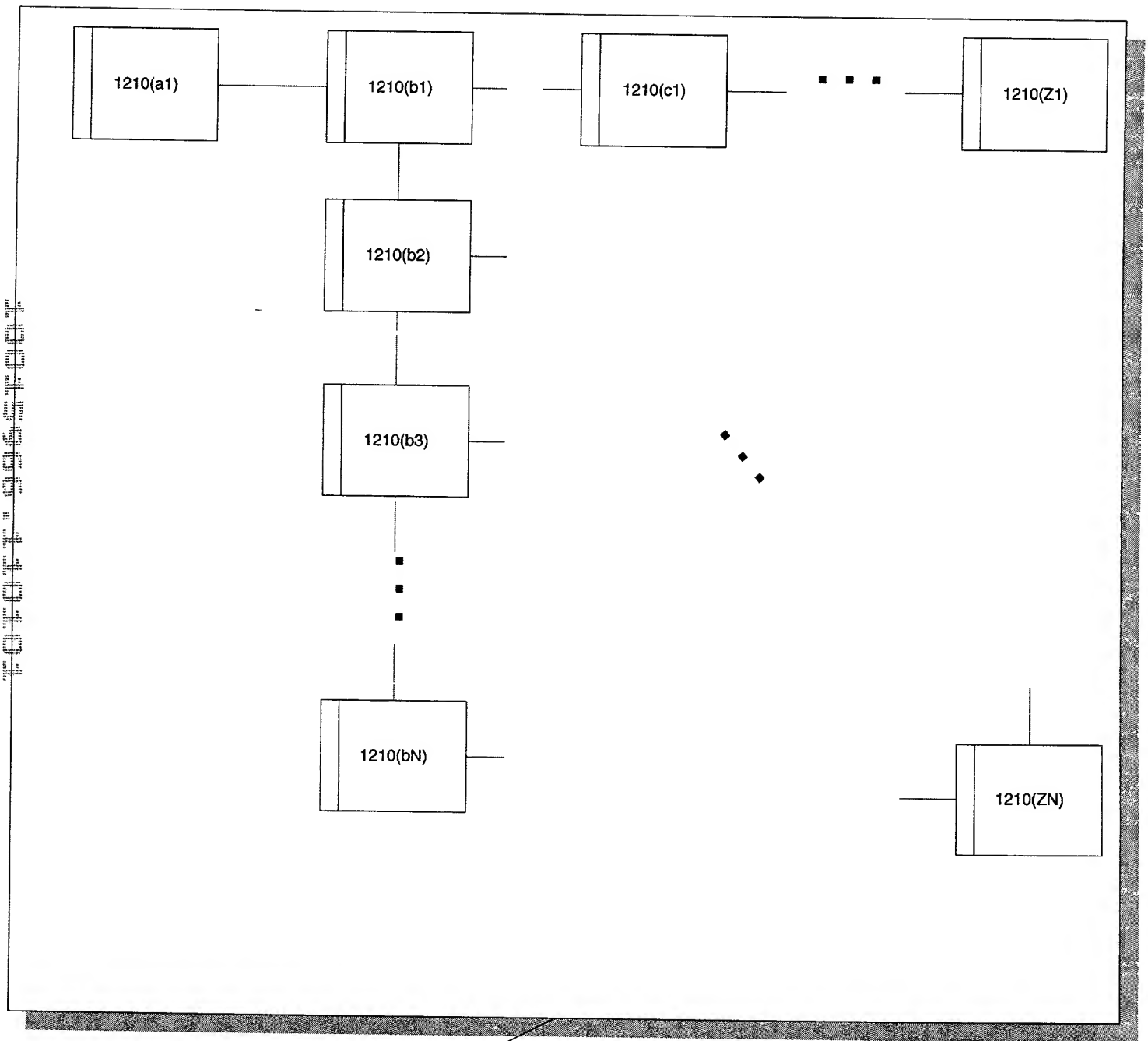

1210(a1)
1210(b1)
1210(c1)
1210(Z1)
1210(b2)
1210(b3)
1210(bN)
1210(ZN)
620

FIG. 12a

Express Mail Label No. EL 955 574 705 US

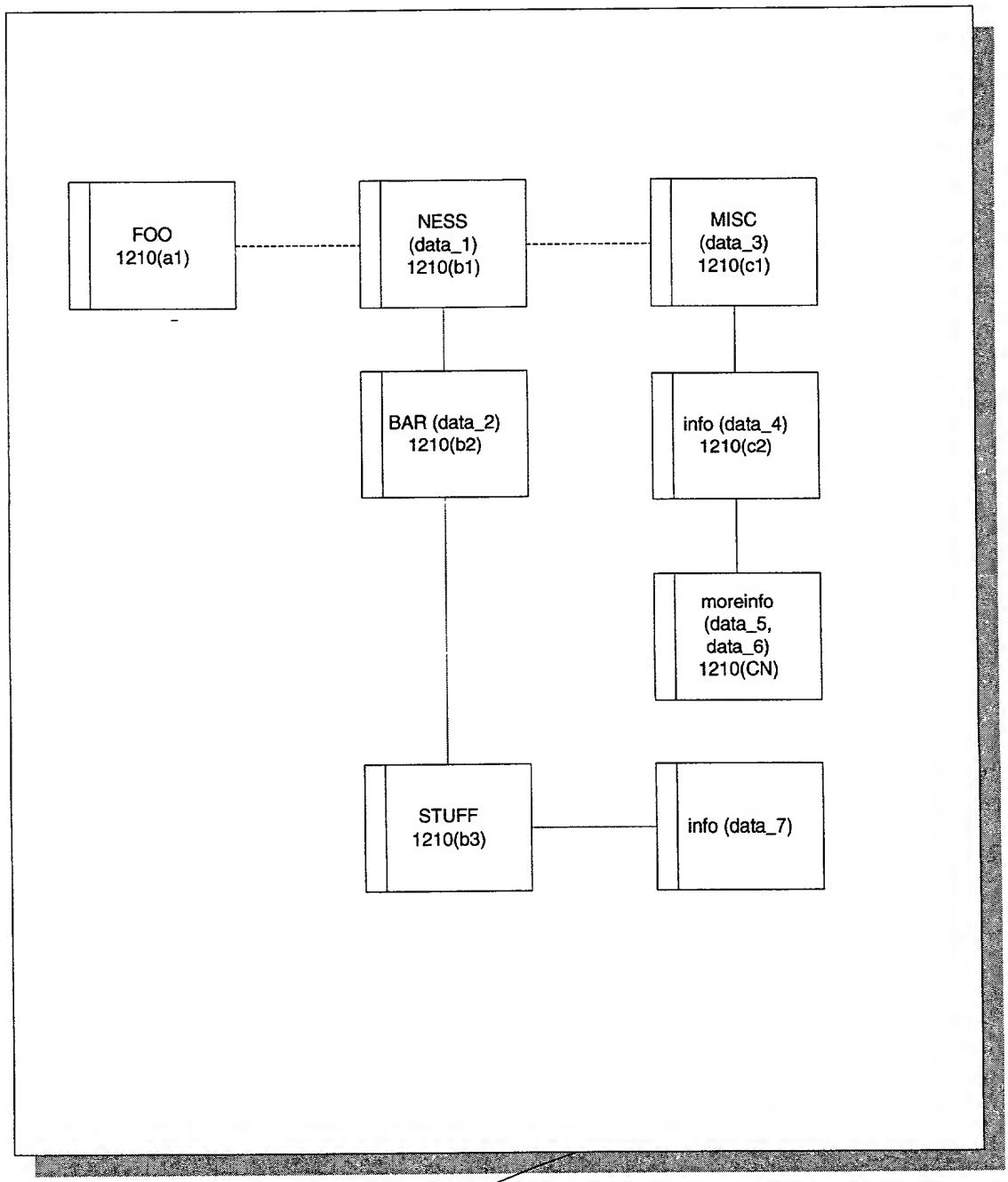


FIG. 12b

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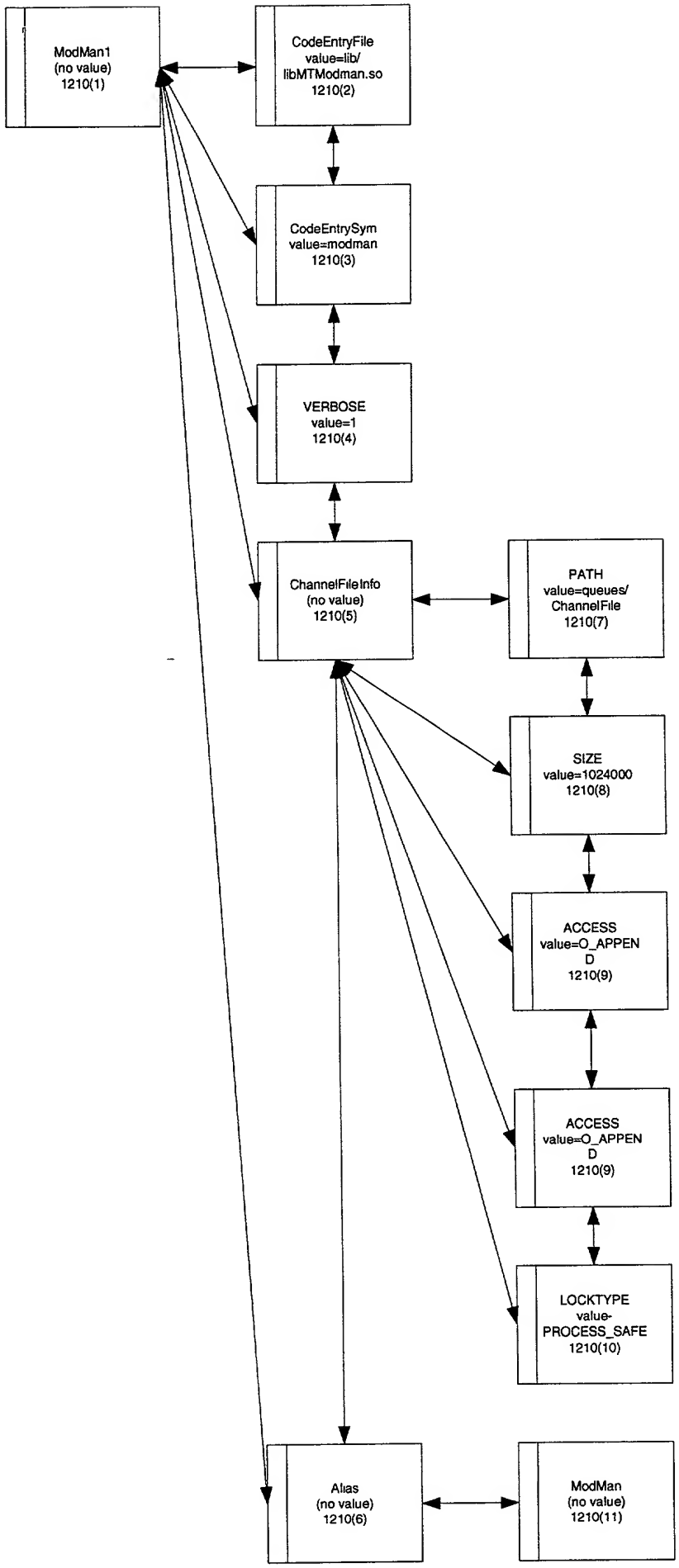


FIG. 12C

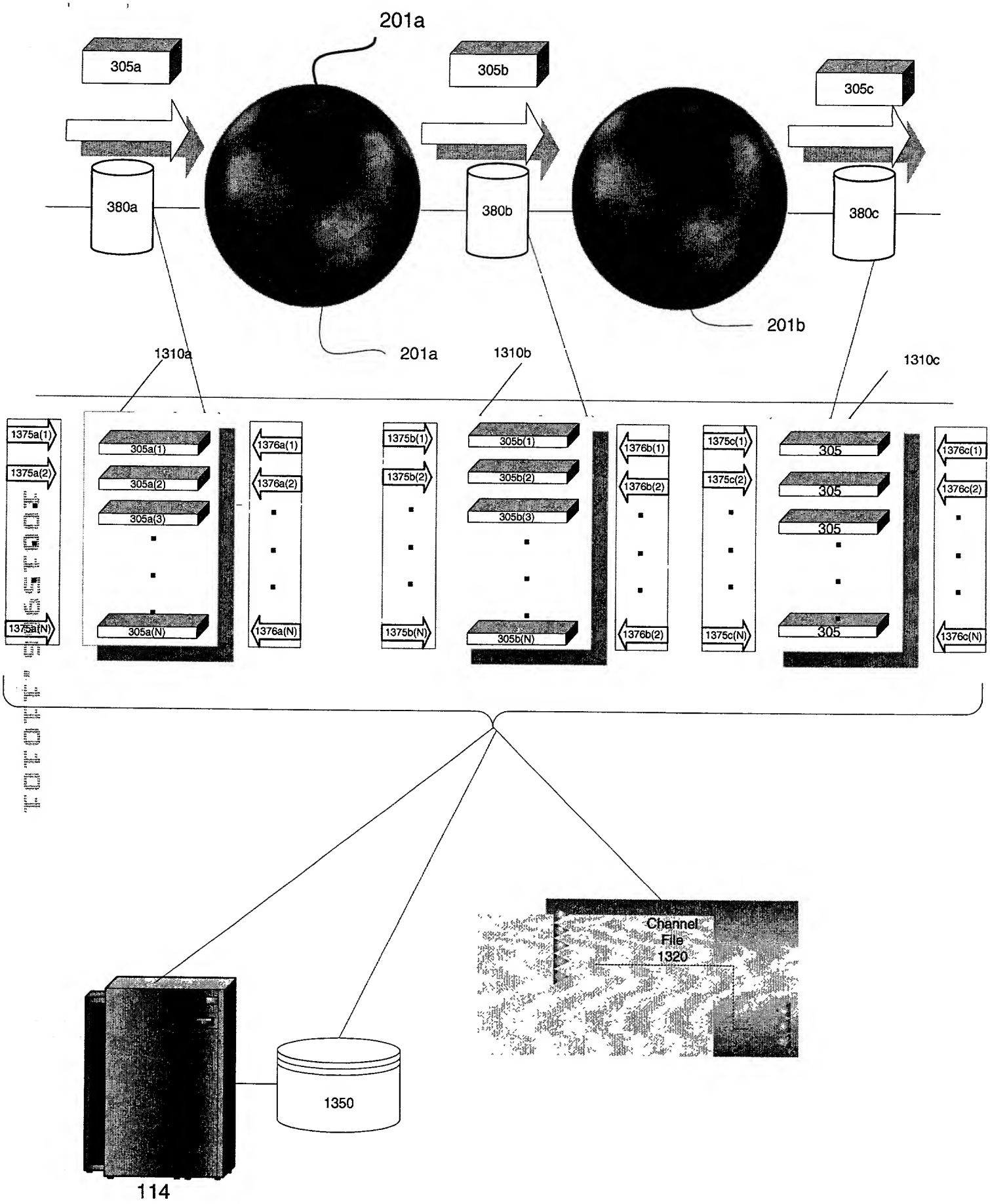

201a
305a
305b
305c
380a
380b
380c
201b
201a
1310a
1310b
1310c
1375a(1)
1375a(2)
1375a(N)
305a(1)
305a(2)
305a(3)
305a(N)
1376a(1)
1376a(2)
1376a(N)
1375b(1)
1375b(2)
1375b(N)
305b(1)
305b(2)
305b(3)
305b(N)
1376b(1)
1376b(2)
1375c(1)
1375c(2)
1375c(N)
305
305
305
305
1376c(1)
1376c(2)
1376c(N)
Channel
File
1320
1350
114

FIG. 13a

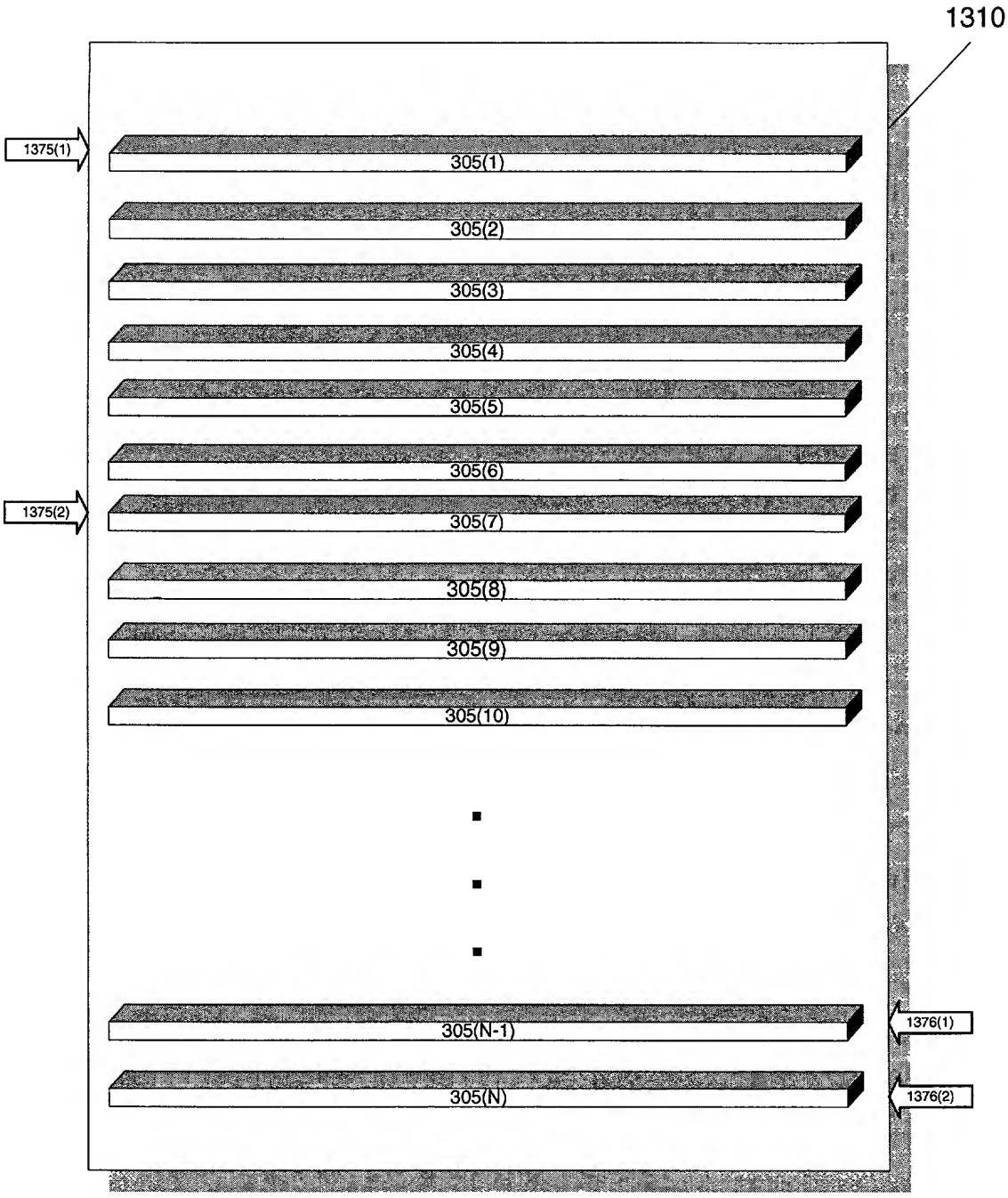

1310
1375(1)
305(1)
305(2)
305(3)
305(4)
305(5)
305(6)
1375(2)
305(7)
305(8)
305(9)
305(10)
305(N-1)
305(N)
1376(1)
1376(2)

FIG. 13b

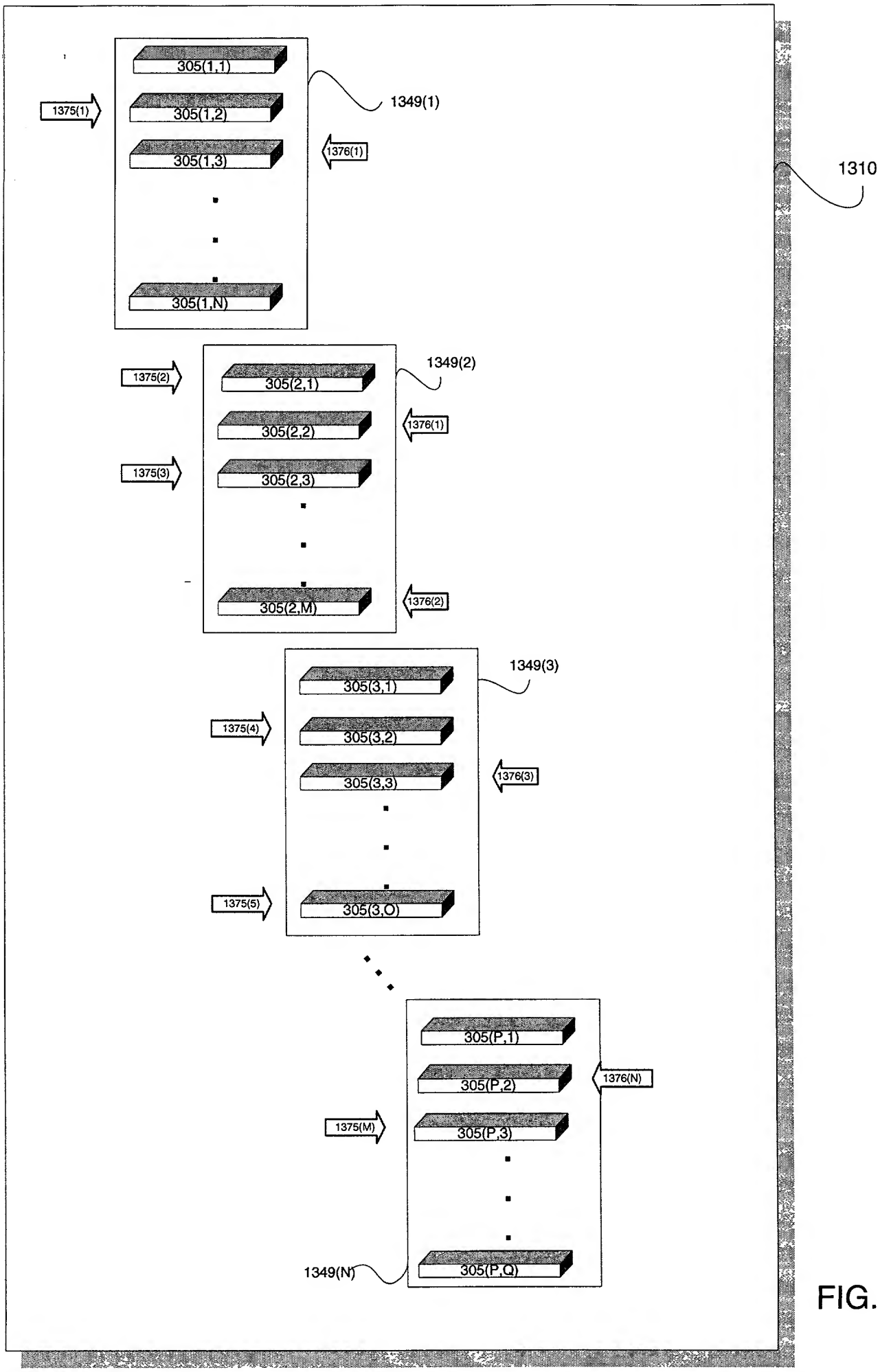

305(1,1)
1375(1)
305(1,2)
1349(1)
305(1,3)
1376(1)
1310
305(1,N)
1375(2)
305(2,1)
1349(2)
305(2,2)
1376(1)
1375(3)
305(2,3)
305(2,M)
1376(2)
305(3,1)
1349(3)
1375(4)
305(3,2)
305(3,3)
1376(3)
1375(5)
305(3,O)
305(P,1)
305(P,2)
1376(N)
1375(M)
305(P,3)
1349(N)
305(P,Q)

FIG. 13c

WriteMsgStruct 1330

Member	Type
buffer 1331	char*
buffersize 1332	long
nextMsg 1333	ChanIo..ChannelFileStruct

FIG. 13d

PageStruct 1340

Member	Type
self 1341	PageStruct*
pagePath 1342	char*
pageIndex 1343	PageIndexStruct*
object 1344	MemHandle
pageData 1345	char*
pageNumber 1346	long
memType 1347	DATA_Q_MEM_TYPE

FIG. 13e

PageIndexStruct 1350

Member	Type
nextReadPostion 1351	unsigned long
nextWritePosition 1352	unsigned long
pagesize 1353	long
pageFullState 1354	long

FIG. 13f

RecordHeaderStruct 1360

Member	Type
commitFlag 1361	char
sequenceNumber 1362	unsigned long
realBuffersize 1363	long
userBuffersize 1364	long

FIG. 13g

MasterPageStruct 1370

Member	Type
self 1371	MaSterPageStruct*
pagePath 1372	char*
_object 1373	MemHandle
masterPageIndex 1374	masterPageIndexStruct*
wlock 1375	LOCK_NODE_PTR
rlock 1376	LOCK_NODE_PTR
readPage 1377	PageStruct*
writePage 1378	PageStruct*
memType 1379	long
maxPages 1379a	long
pageSize 1379b	long
lockState 1379c	LOCK_STATE

FIG. 13h

MasterPageIndexStruct 1380

Member	Type
firstPageNumber 1381	long
lastPageNumber 1382	long
pagesize 1383	long
maxPages 1384	long
readPageState 1385	READ_PAGE_STATE
writePageState 1386	WRITE_PAGE_STATE
recordsWritten 1387	unsigned long
recordsRead 1388	unsigned long

FIG. 13i

Patent Application Publication

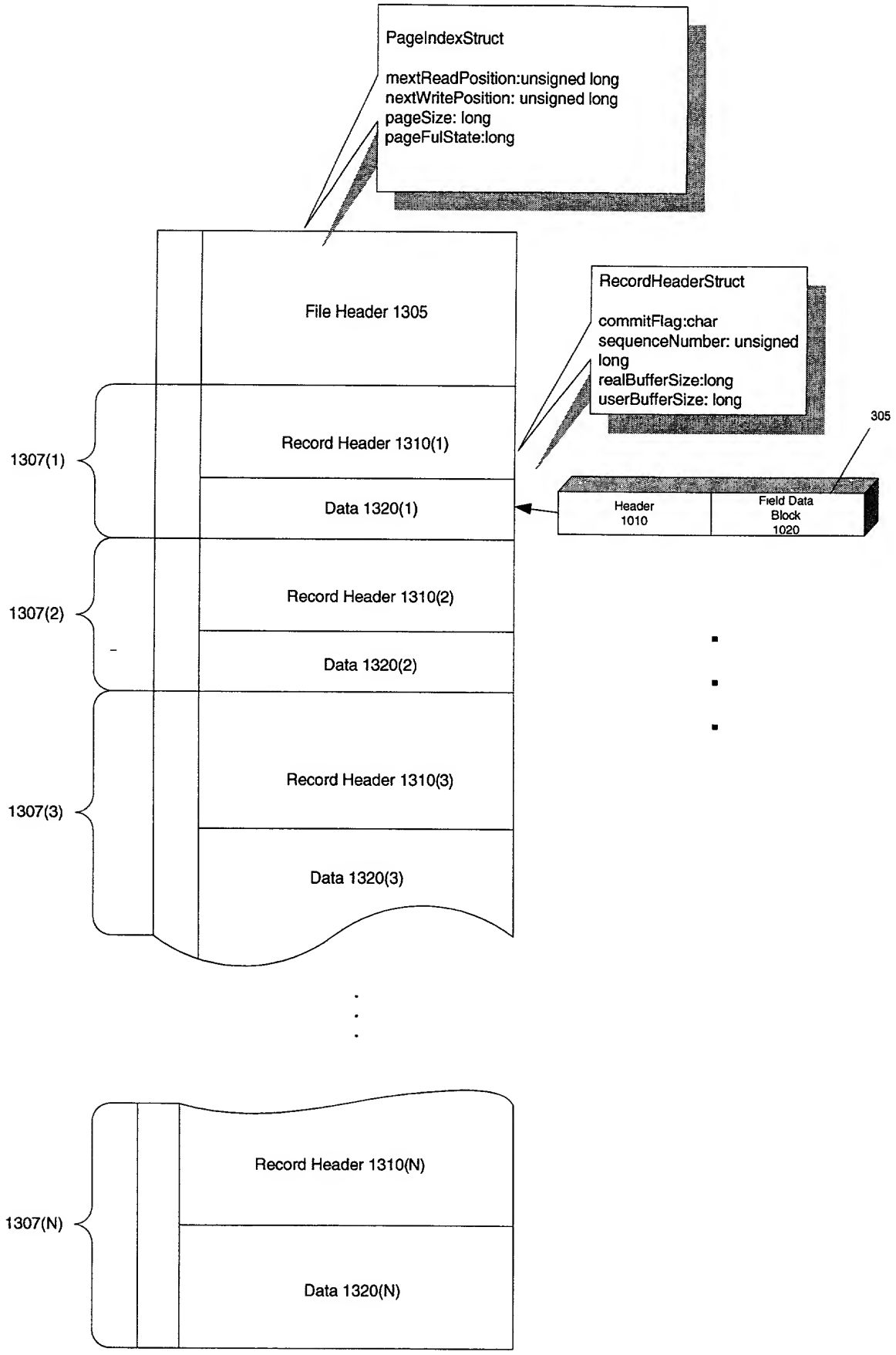

PageIndexStruct
mextReadPosition:unsigned long
nextWritePosition: unsigned long
pageSize: long
pageFulState:long
File Header 1305
RecordHeaderStruct
commitFlag:char
sequenceNumber: unsigned long
realBufferSize:long
userBufferSize: long
305
Record Header 1310(1)
Data 1320(1)
Header 1010
Field Data Block 1020
1307(1)
Record Header 1310(2)
Data 1320(2)
1307(2)
Record Header 1310(3)
Data 1320(3)
1307(3)
Record Header 1310(N)
Data 1320(N)
1307(N)

FIG. 13j

ChanIoStruct 1430

Member	Type
self 1431	ChanIoStruct*
dictionary 1433	DictStruct*
ChanFileInfo 1435	ChanIo..ChannelFileStruct
message 1437	MsgHandle
channels 1438	Vector*
translist 1439	Vector*

FIG. 14a

ChannelFileStruct 1440

Member	Type
path 1441	char*
access 1443	ChannelFileAccessType
size 1445	long

FIG. 14b

ChannelObjStruct 1450

Member	Type
ChannelName 1451	char*
channelId 1453	DataQHandle
type 1455	MCPChannelType

FIG. 14c

ChannelFileStruct 1460

Member	Type
handle 1461	void*
header 1463	char*
currentObj 1465	void*
lastObj 1467	void*
access 1468	ChannelFileAccessType
lock 1469	LOCK_NODE_PTR

FIG. 14d

ChannelFileHdrStruct 1470

Member	Type
version 1471	long
numRecords 1473	long
checkSum 1475	long

FIG. 14e

ChannelFIleObjectStruct 1480

Member	Type
chanInfo 1481	ChanInfoStruct
ChannelName[] 1483	char
ChannelPath[] 1485	char
ChannelOwner[] 1487	char
ChannelPermAuth[] 1489	char

FIG. 14f

ChanInfoStruct 1480

Member	Type
maxPageSize 1491	Long
maxPages 1493	long
lockState 1495	LOCK_STATE
memType 1497	Data_Q_MEM_TYPE

FIG. 14g

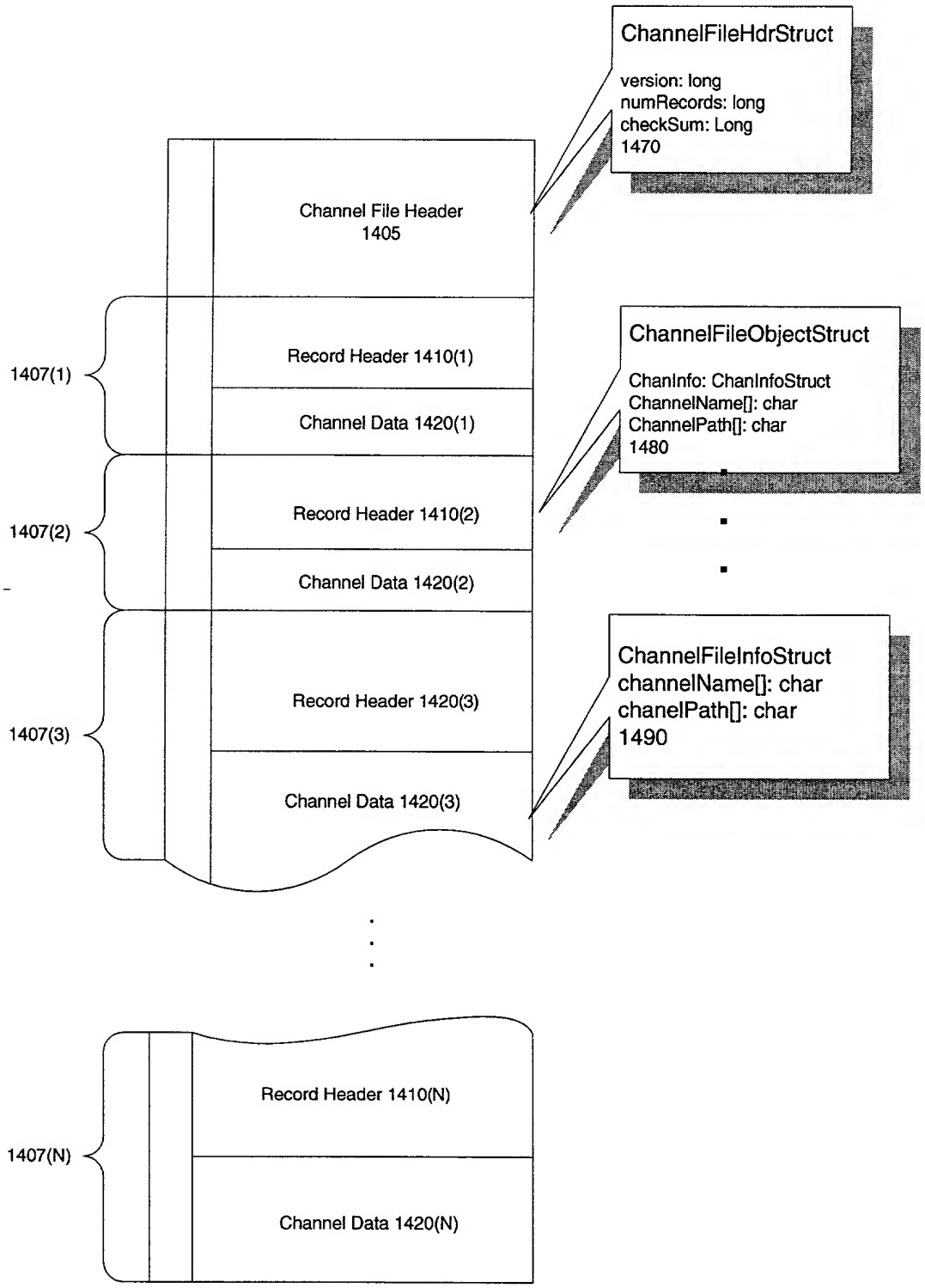

ChannelFileHdrStruct
version: long
numRecords: long
checkSum: Long
1470
Channel File Header
1405
Record Header 1410(1)
Channel Data 1420(1)
Record Header 1410(2)
Channel Data 1420(2)
Record Header 1420(3)
Channel Data 1420(3)
Record Header 1410(N)
Channel Data 1420(N)
1407(1)
1407(2)
1407(3)
1407(N)
ChannelFileObjectStruct
ChanInfo: ChanInfoStruct
ChannelName[]: char
ChannelPath[]: char
1480
ChannelFileInfoStruct
channelName[]: char
chanelPath[]: char
1490

FIG. 14h

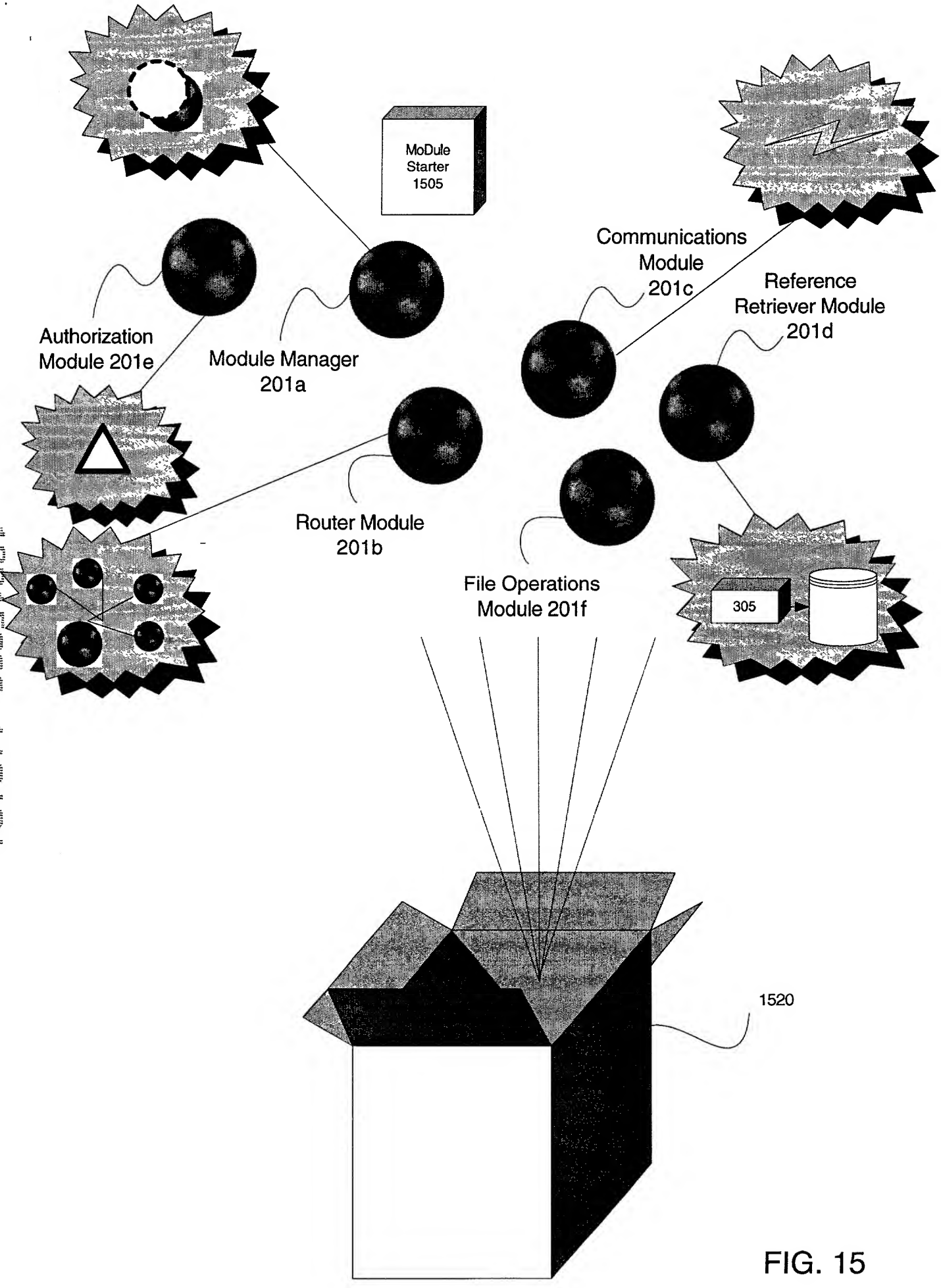

MoDule
Starter
1505
Communications
Module
201c
Reference
Retriever Module
201d
Authorization
Module 201e
Module Manager
201a
Router Module
201b
File Operations
Module 201f
305
1520

FIG. 15

Patent Application Publication

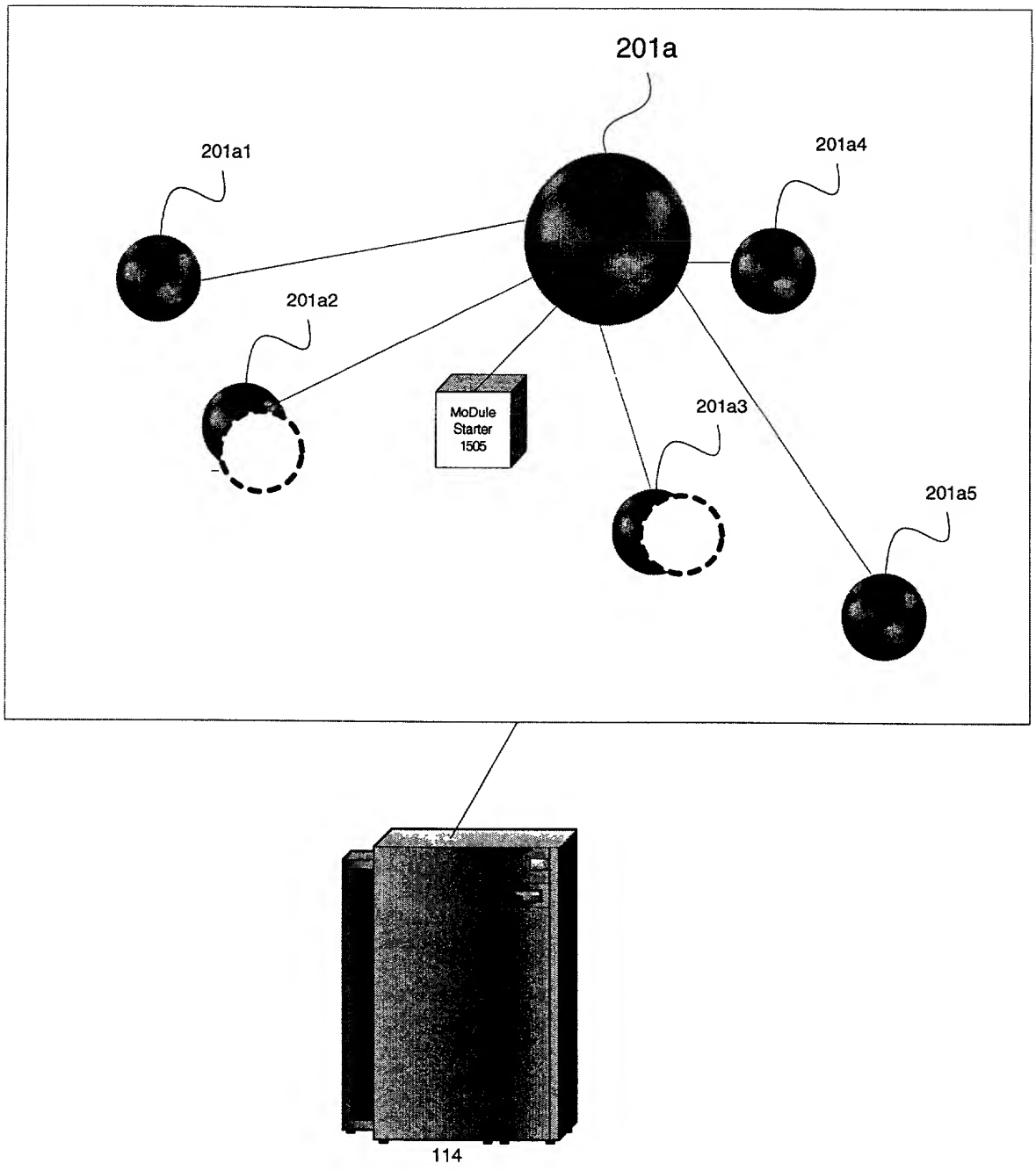


FIG. 16

Docket #1005

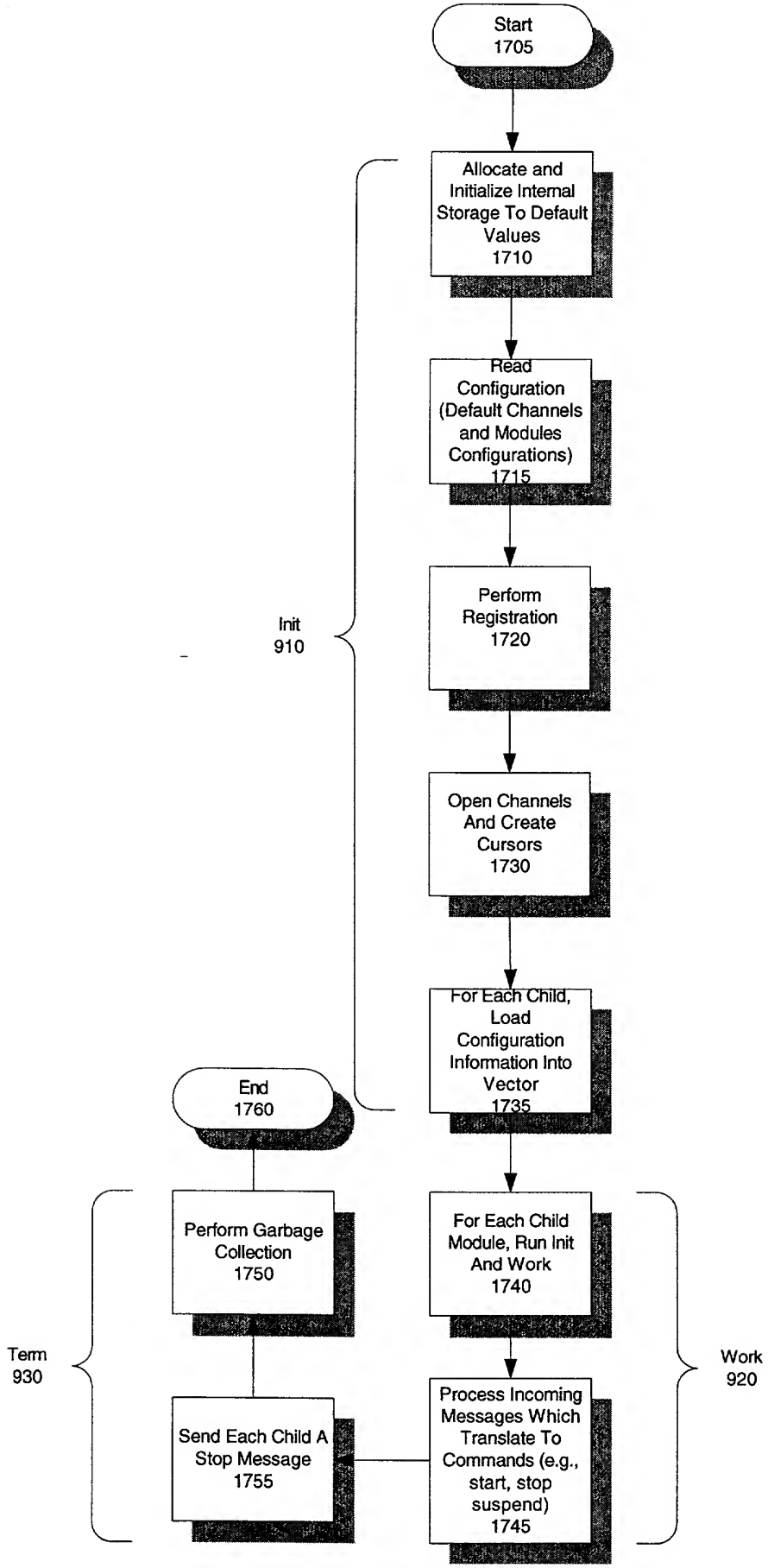


FIG. 17

Docket No. 50277-0005

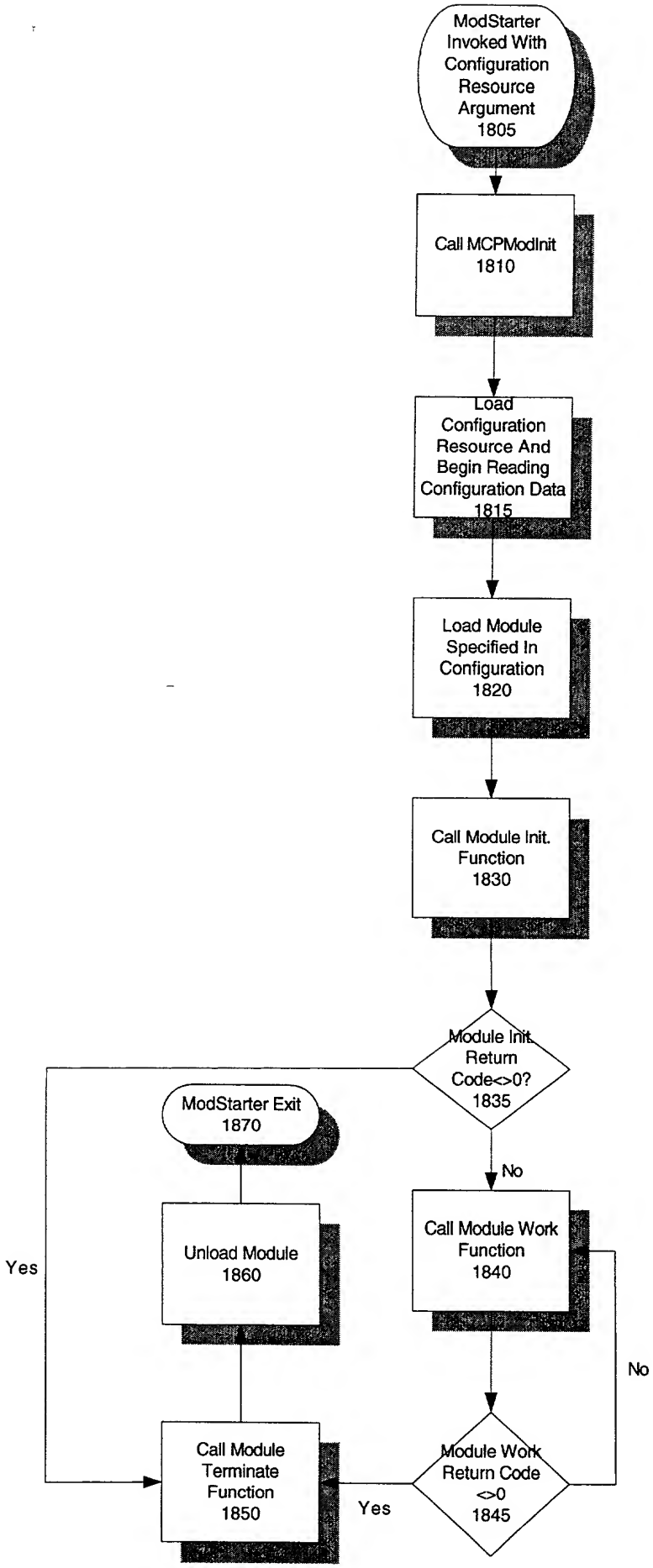


FIG. 18

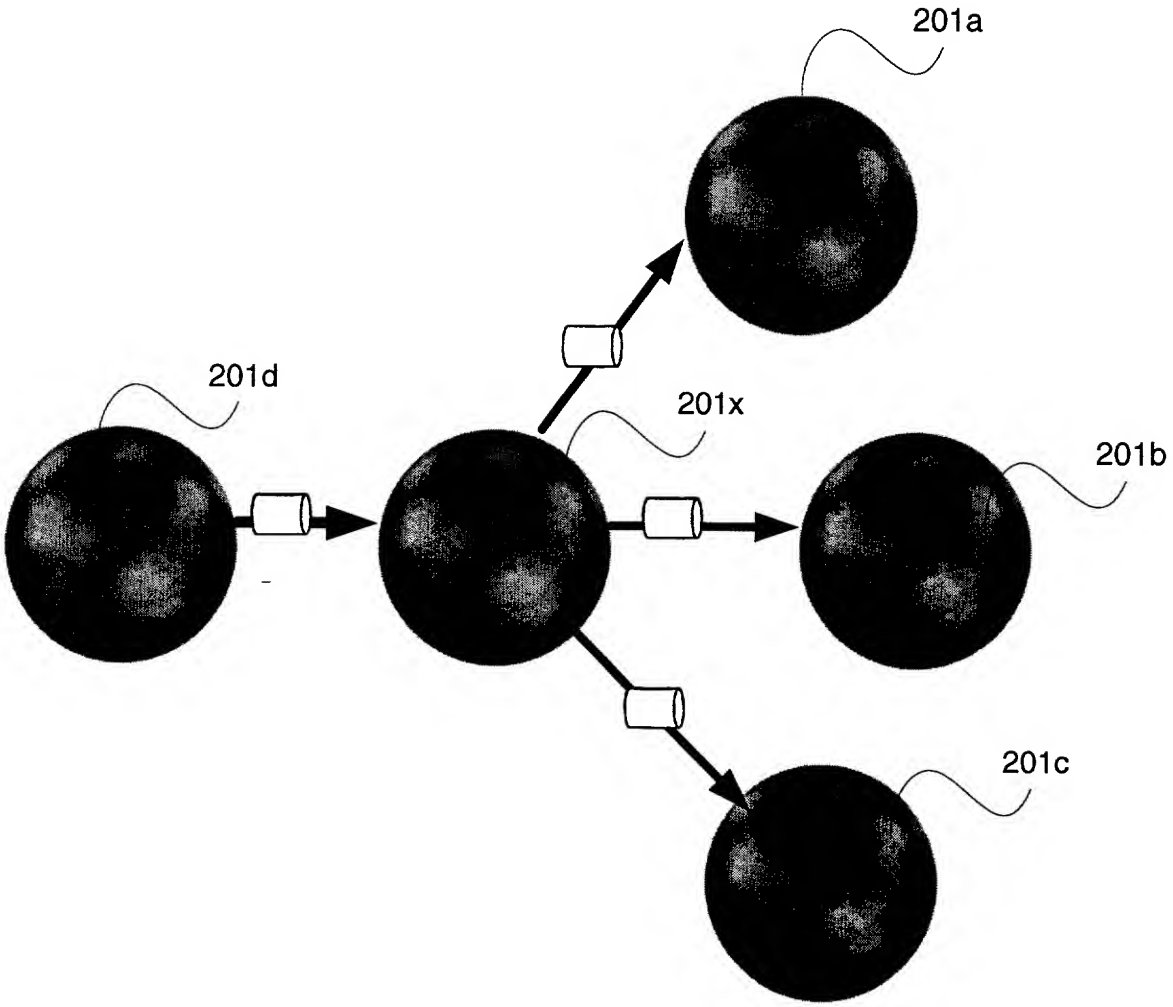
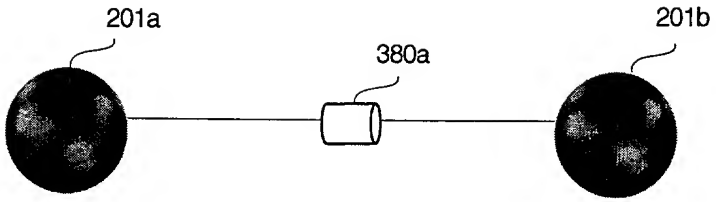


FIG. 19

Docket No. 50277-1405



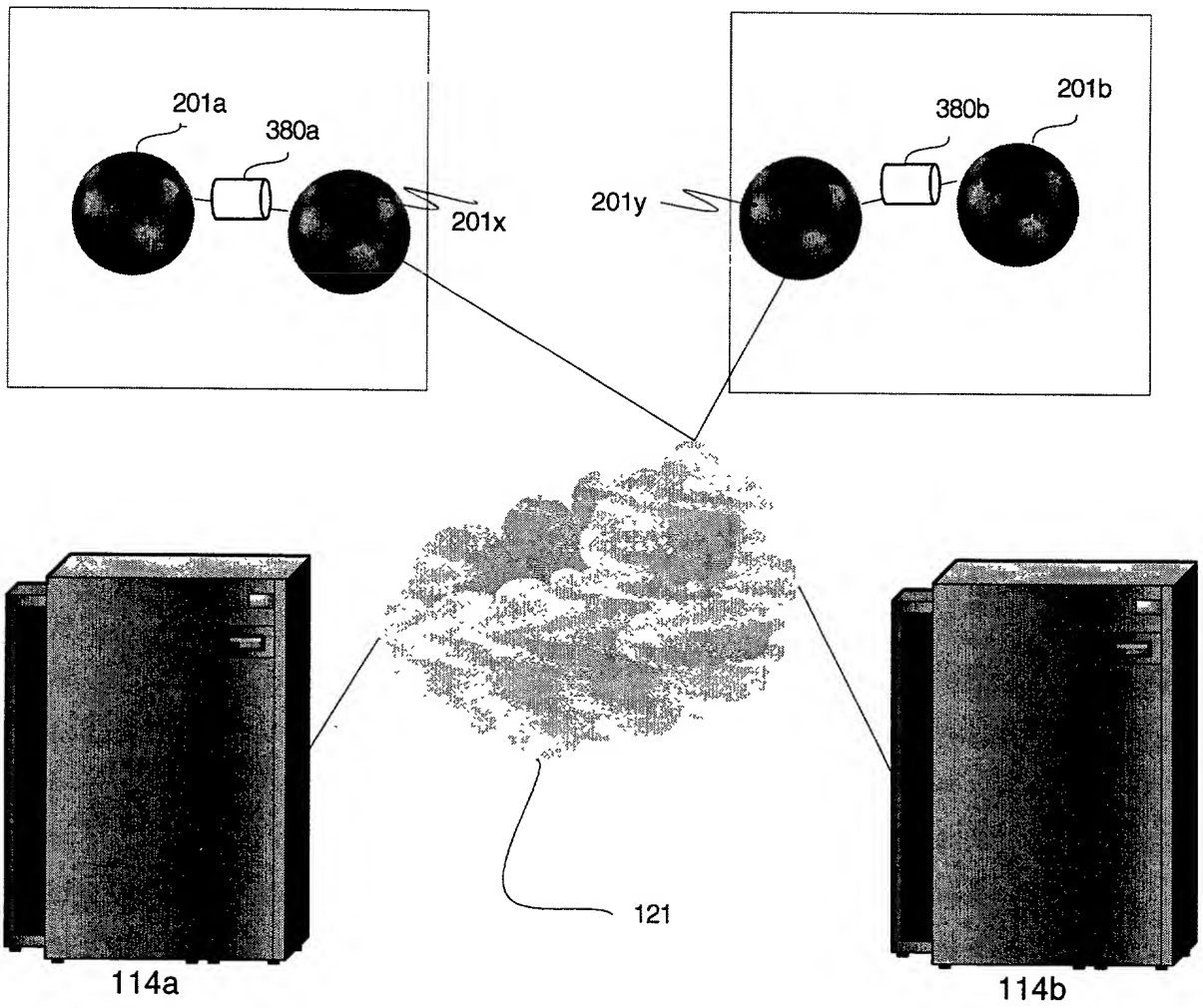


FIG. 20

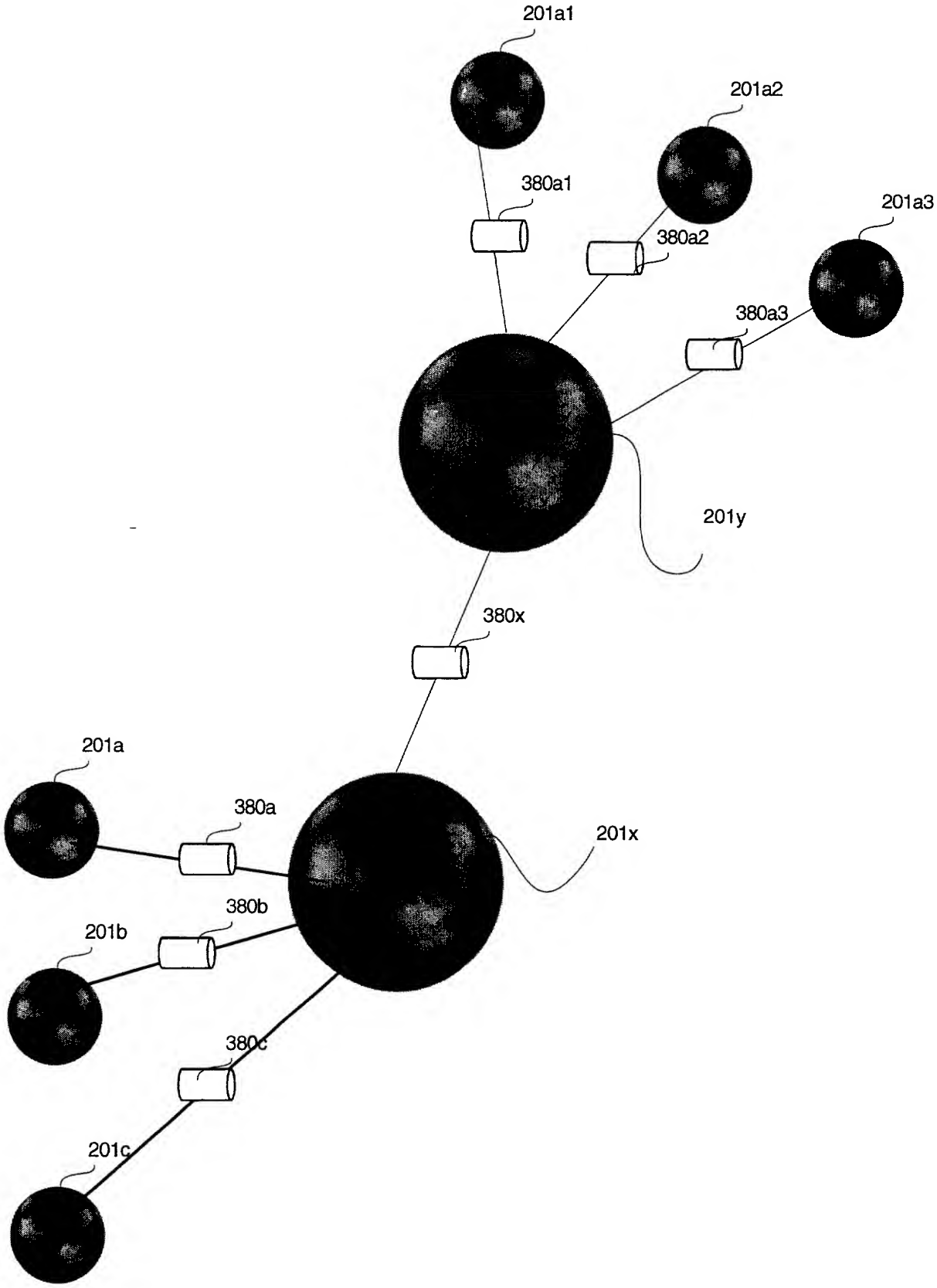

201a1
201a2
380a1
201a3
380a2
380a3
201y
380x
201a
380a
201x
380b
201b
380c
201c

FIG. 21

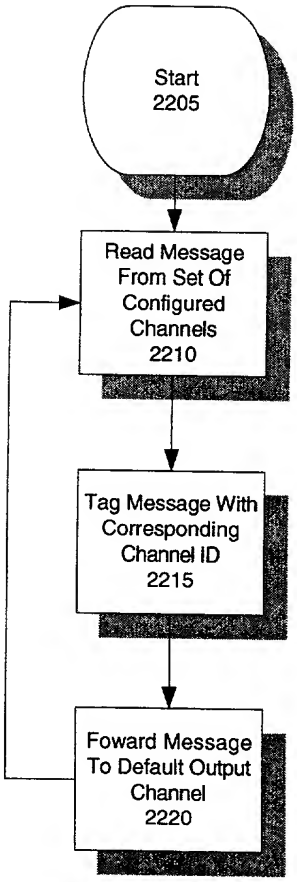

Start
2205
Read Message From Set Of Configured Channels
2210
Tag Message With Corresponding Channel ID
2215
Foward Message To Default Output Channel
2220

FIG. 22

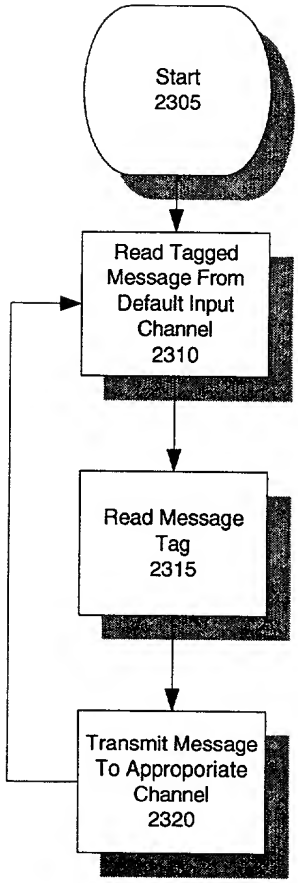

Start
2305
Read Tagged Message From Default Input Channel
2310
Read Message Tag
2315
Transmit Message To Approporiate Channel
2320

FIG. 23

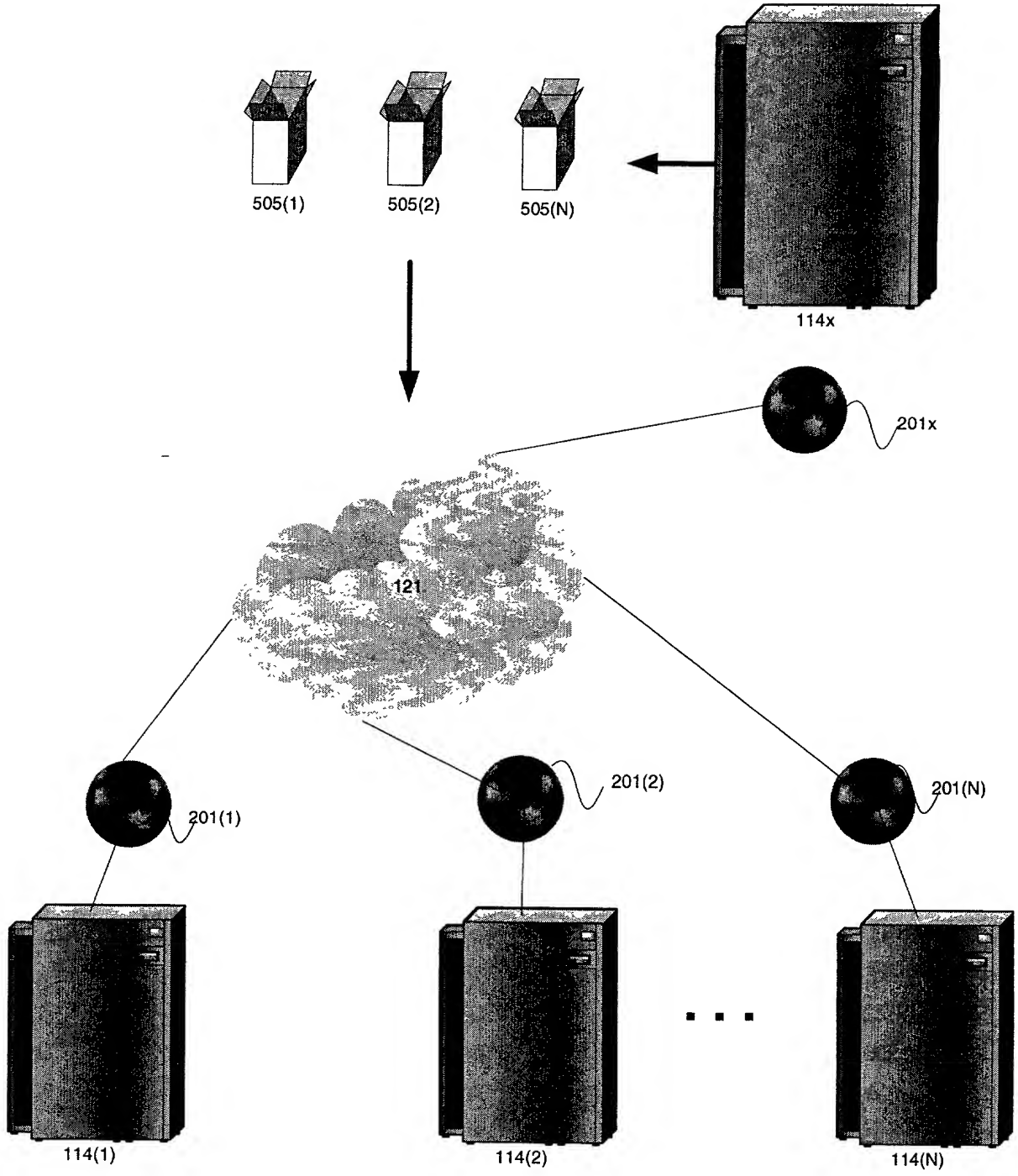


FIG. 24

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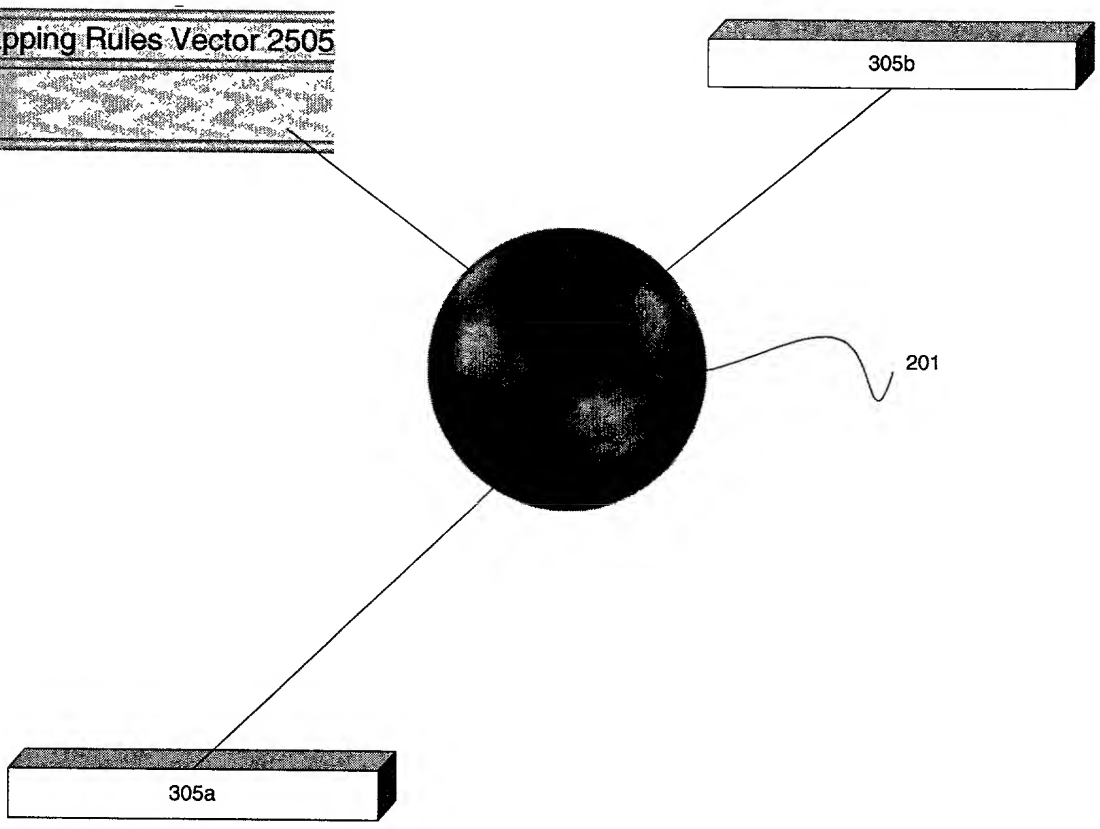


FIG. 25

Attorney Docket No. 2605.2004-000

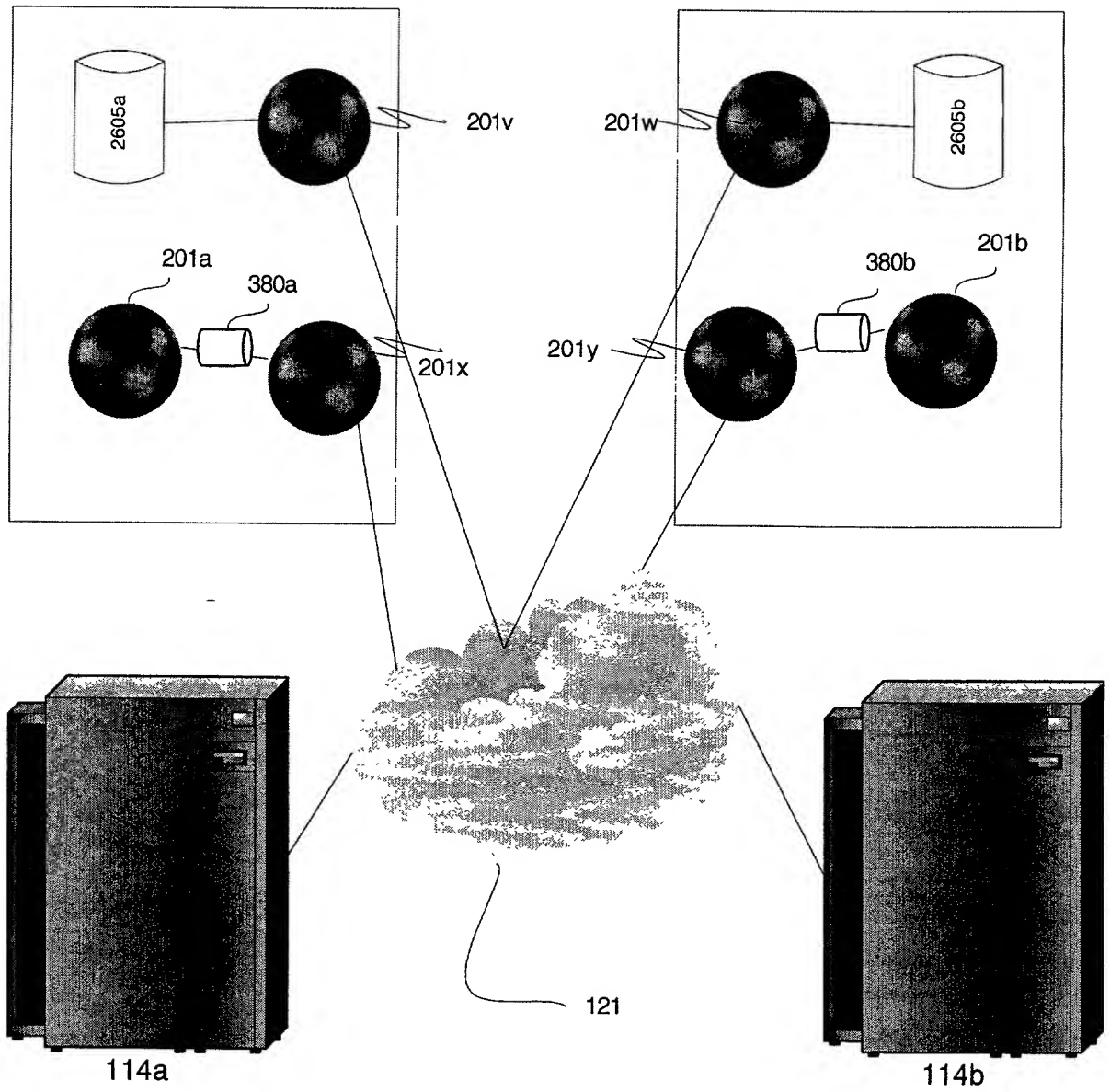


FIG. 26

Patent Application Publication Aug. 14, 2008 Sheet 27 of 34 US 2008/0195754 A1

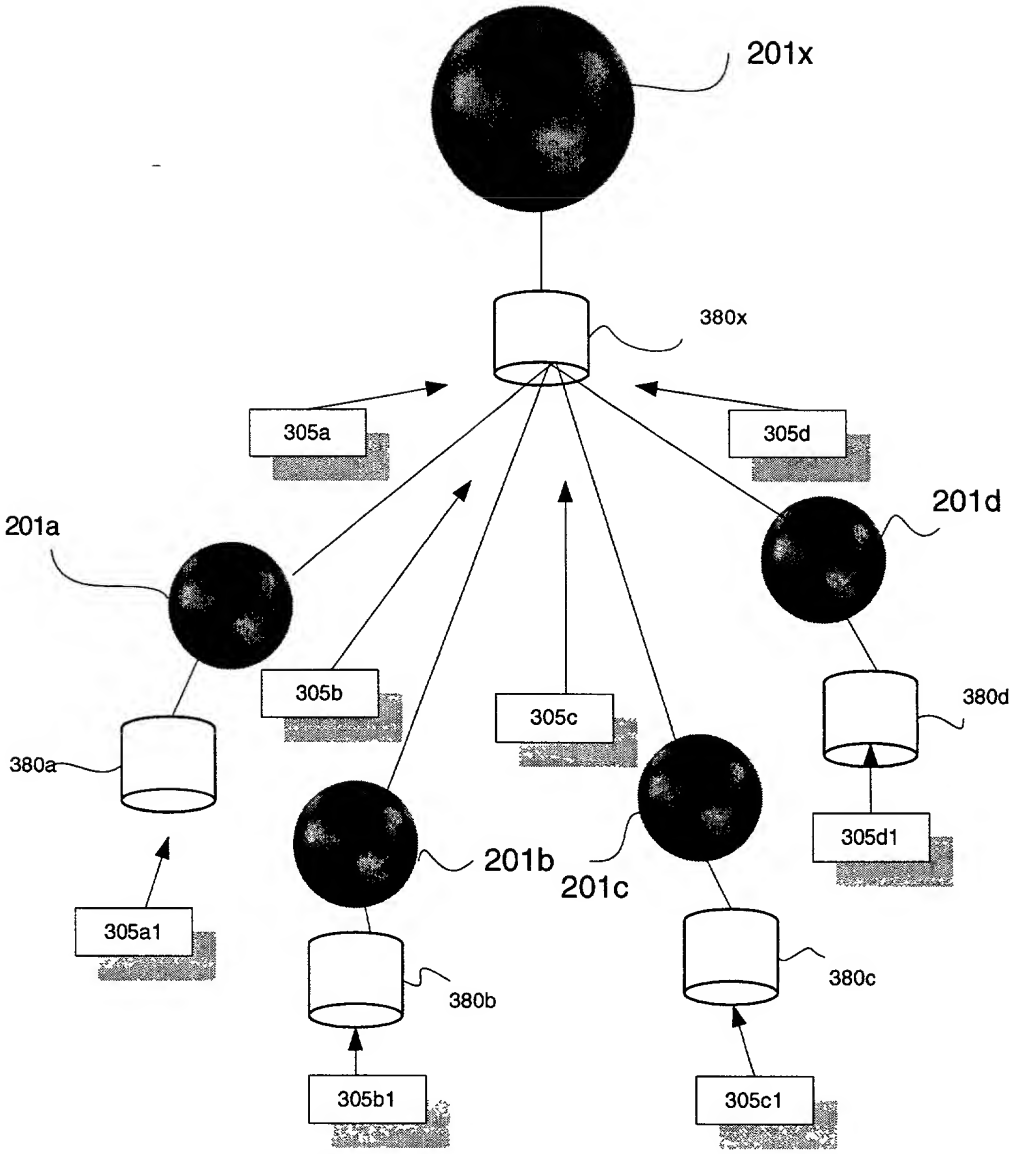


FIG. 27

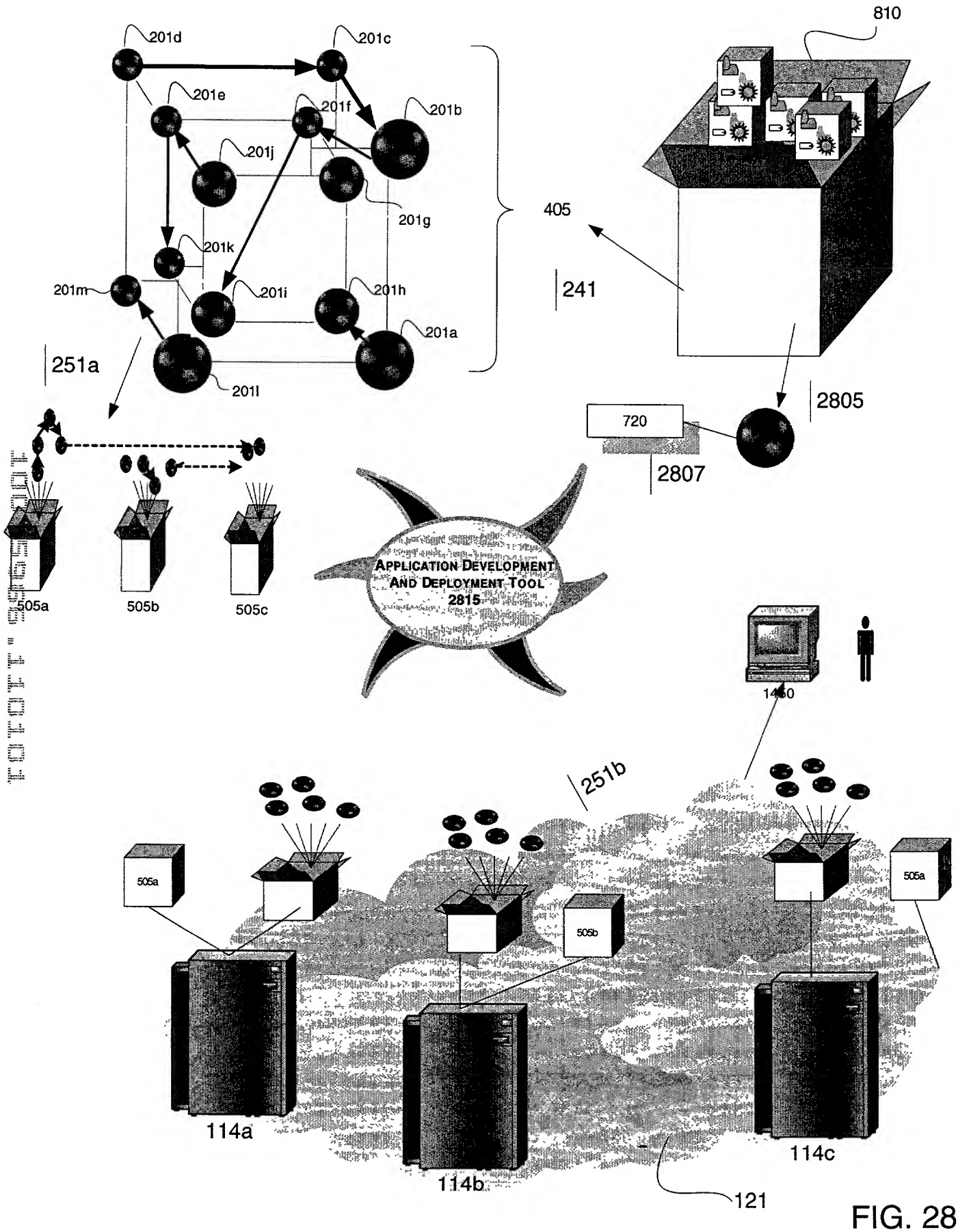

201d
201c
201e
201f
201b
201j
201g
201k
201m
201i
201h
201a
201l
251a
810
405
241
2805
720
2807
505a
505b
505c
APPLICATION DEVELOPMENT AND DEPLOYMENT TOOL 2815
1460
251b
505a
505b
505a
114a
114b
114c
121

FIG. 28

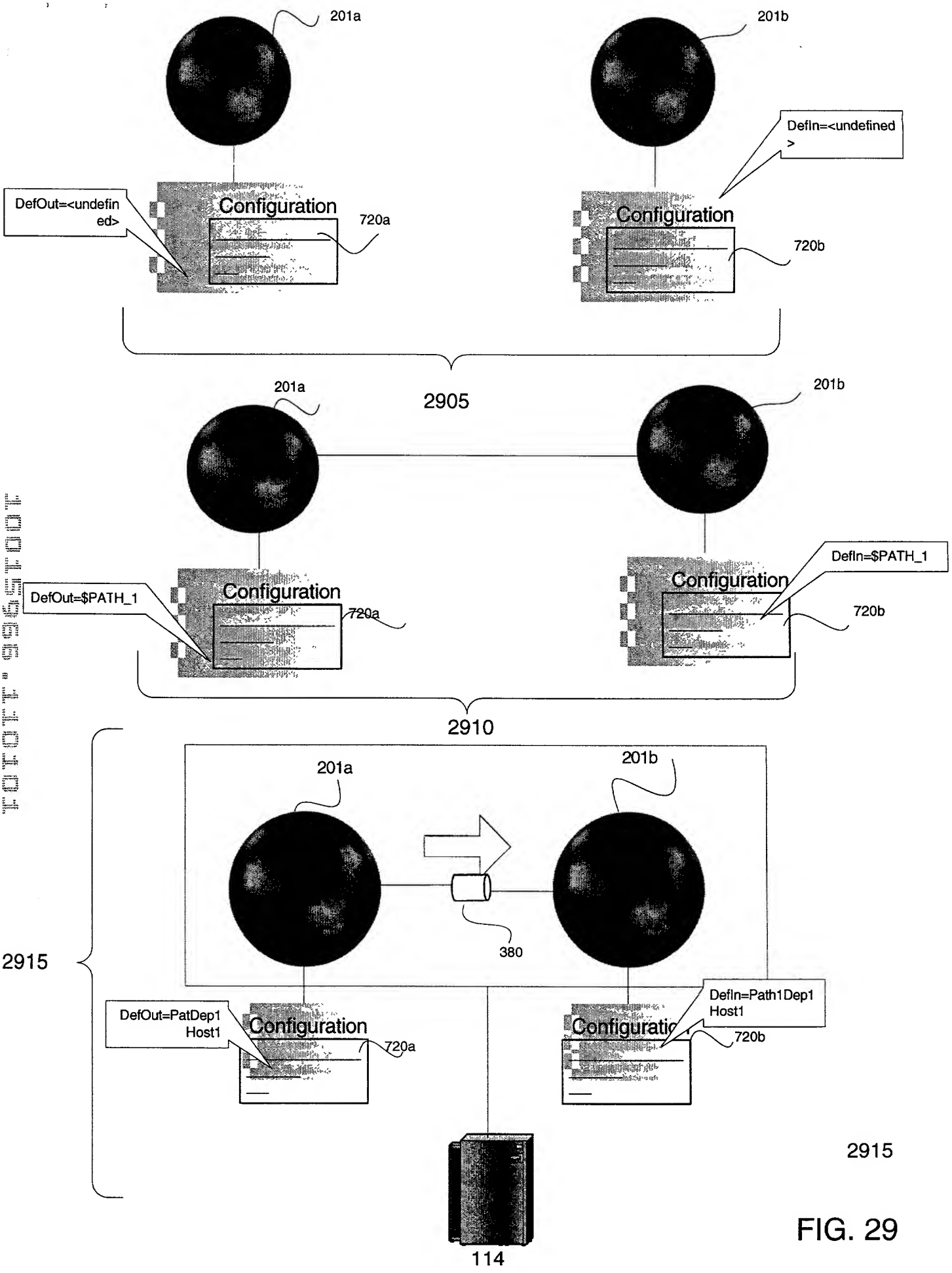

201a
201b
DefIn=<undefined
>
DefOut=<undefin
ed>
Configuration
720a
Configuration
720b
2905
201a
201b
DefIn=$PATH_1
DefOut=$PATH_1
Configuration
720a
Configuration
720b
2910
201a
201b
380
2915
DefOut=PatDep1
Host1
Configuration
720a
DefIn=Path1Dep1
Host1
720b
2915
114

FIG. 29

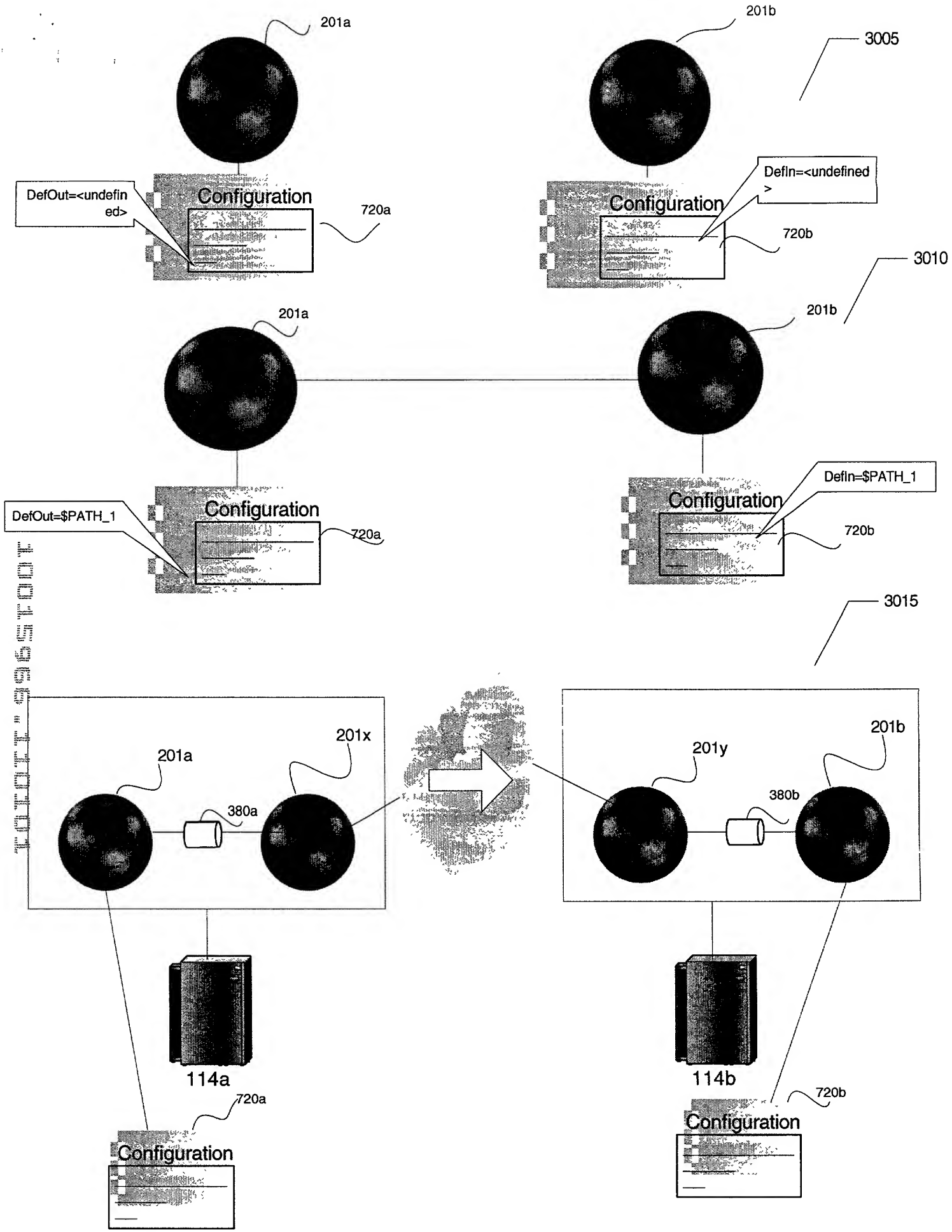

201a
201b
3005
DefOut=<undefined>
Configuration
720a
DefIn=<undefined>
Configuration
720b
3010
201a
201b
DefOut=$PATH_1
Configuration
720a
DefIn=$PATH_1
Configuration
720b
3015
201a
201x
380a
201y
201b
380b
114a
114b
720a
Configuration
720b
Configuration

FIG. 30

Docket No. 50277-0904

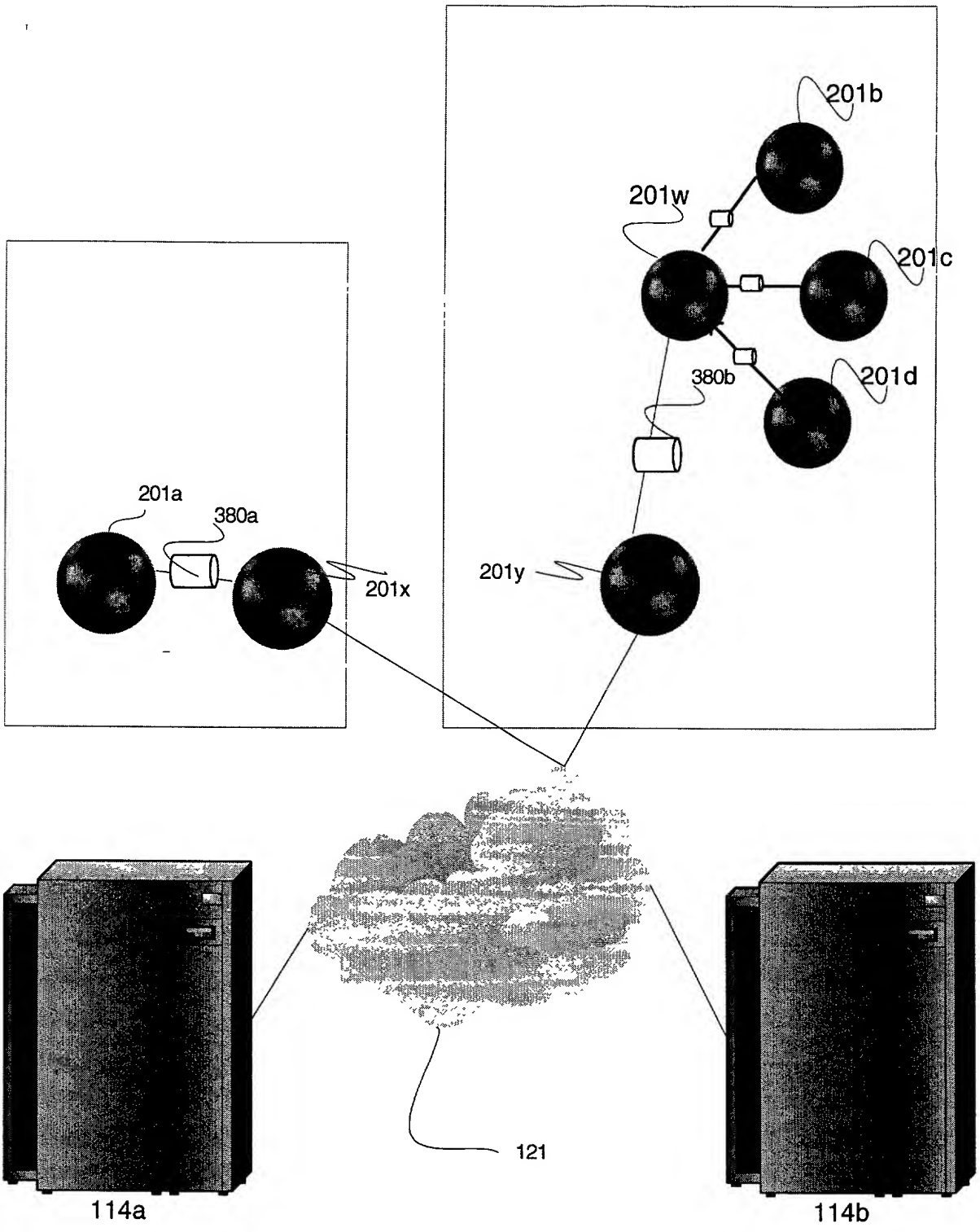


FIG. 31

Exhibit 1056 - Page 1 of 1056

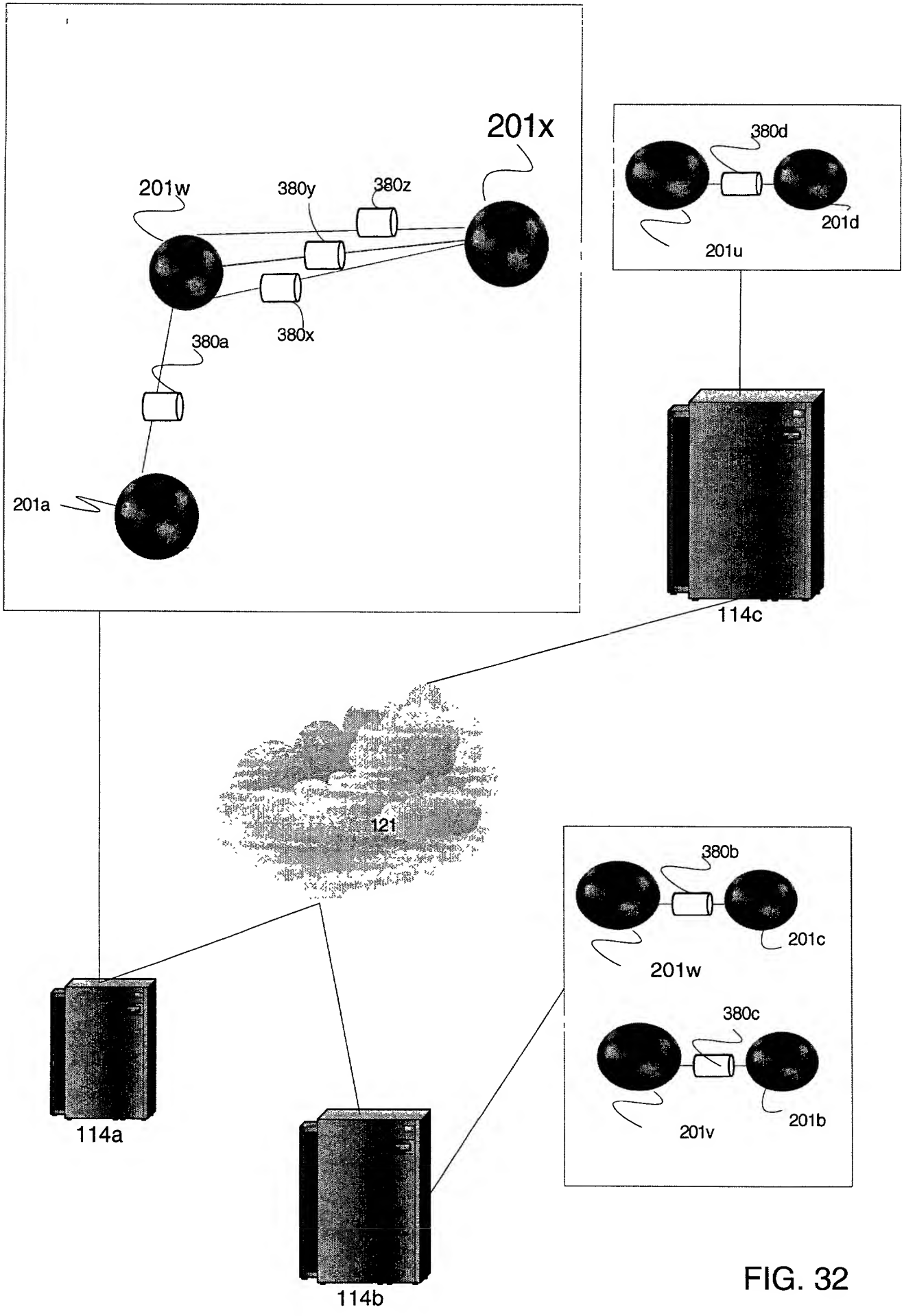


FIG. 32

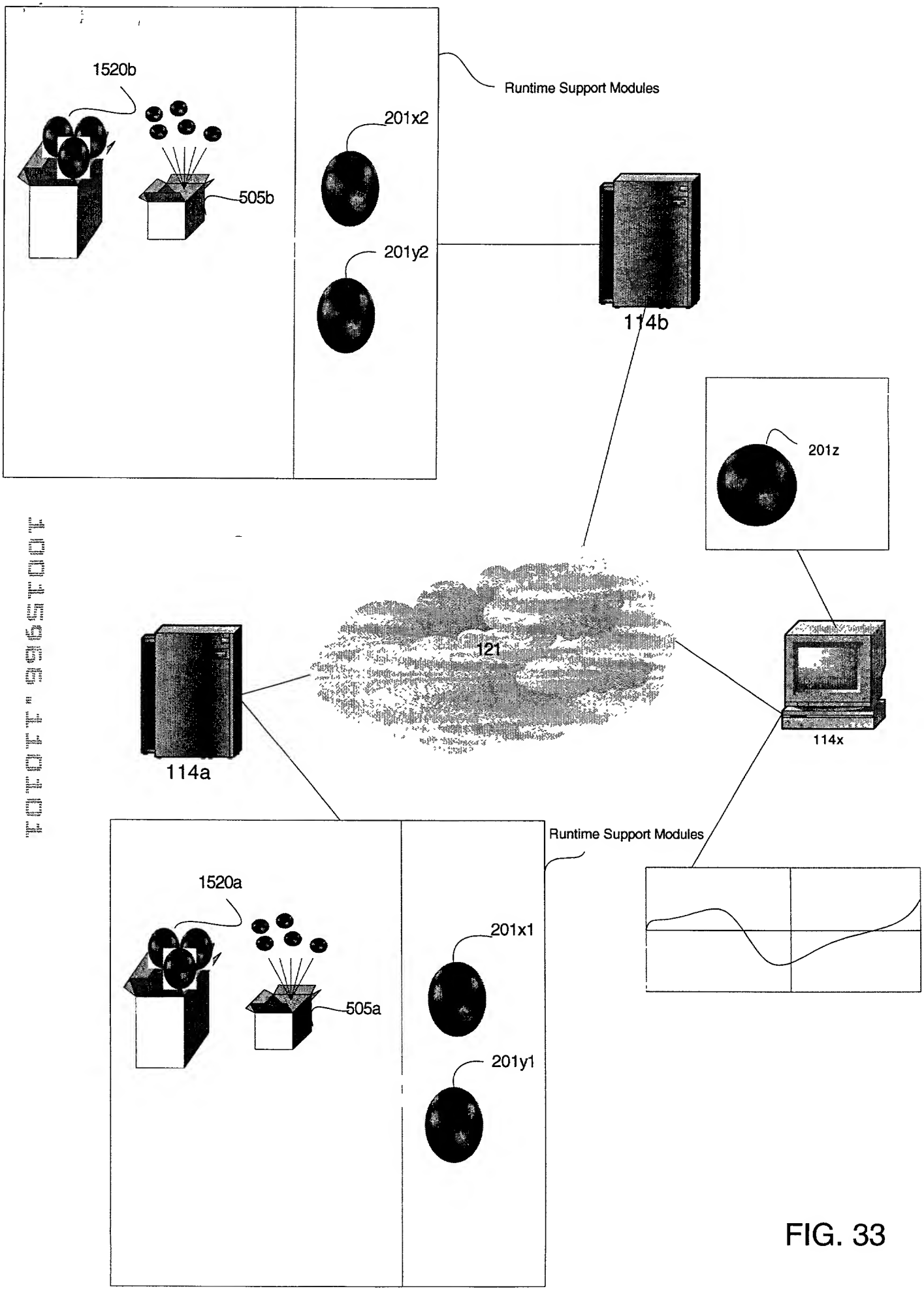

1520b
505b
Runtime Support Modules
201x2
201y2
114b
201z
121
114a
114x
Runtime Support Modules
1520a
505a
201x1
201y1

FIG. 33

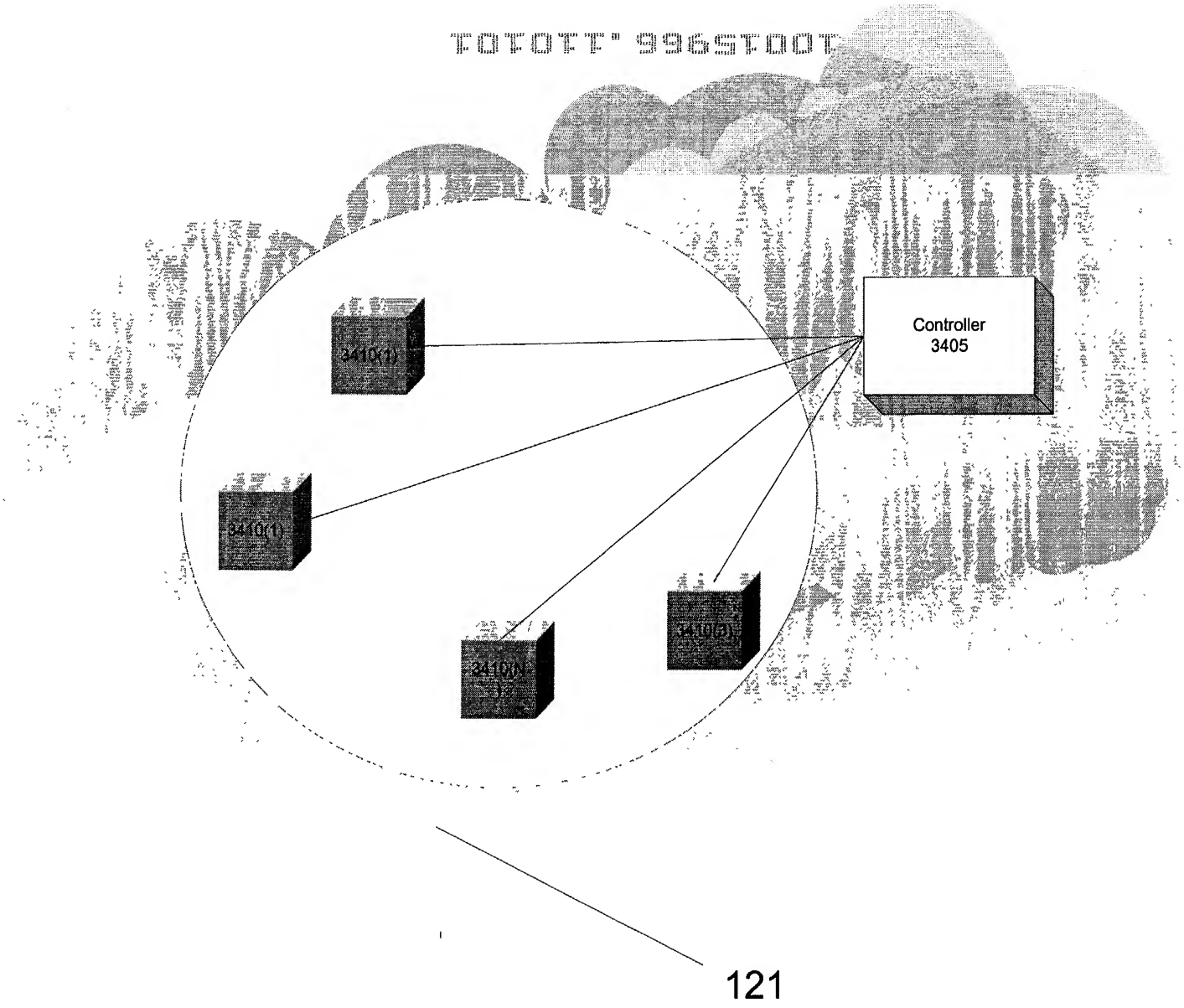


FIG. 34

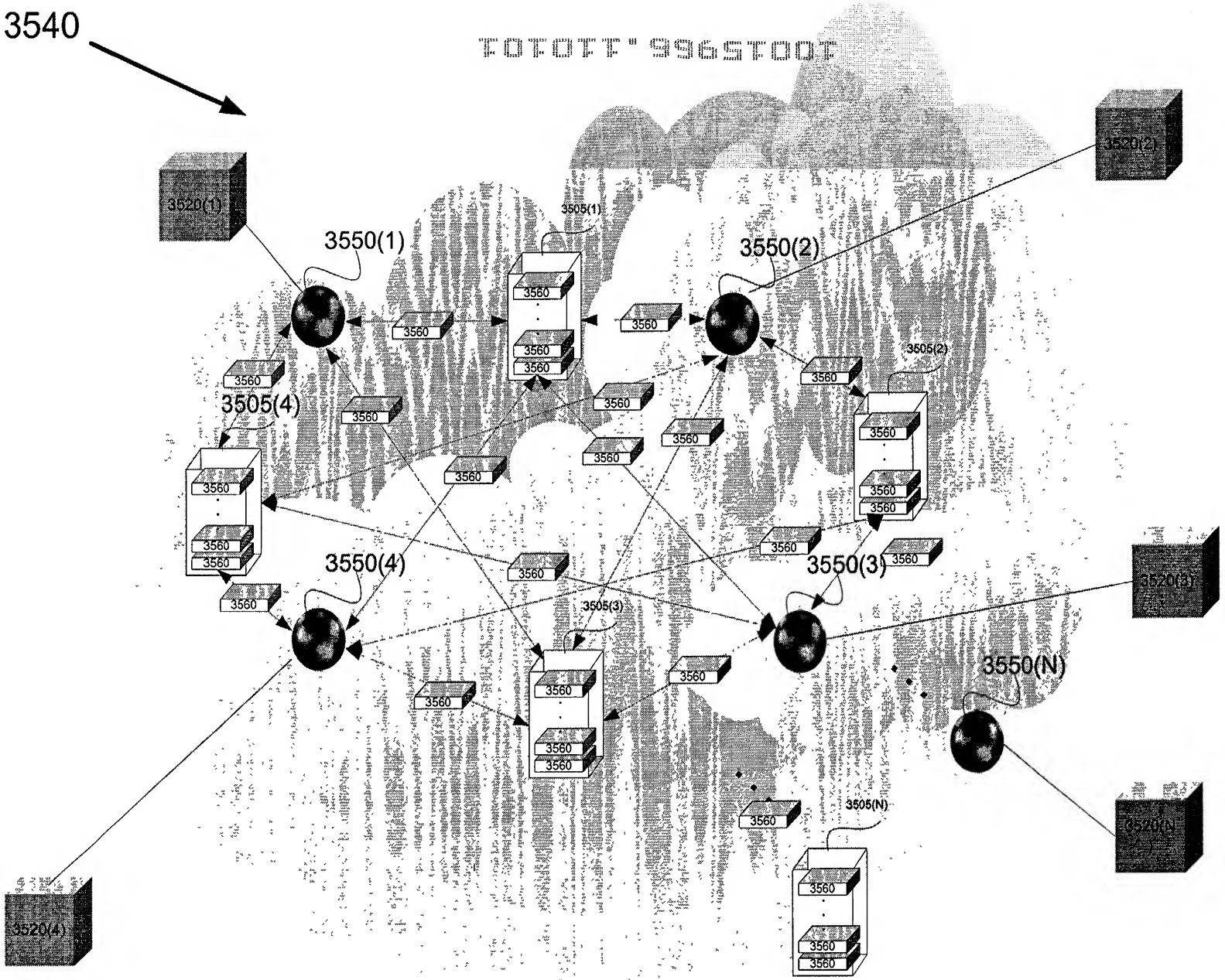

3540
3520(1)
3520(2)
3550(1)
3550(2)
3505(1)
3505(2)
3505(4)
3550(4)
3550(3)
3505(3)
3520(3)
3550(N)
3505(N)
3520(4)
3560

FIG. 35

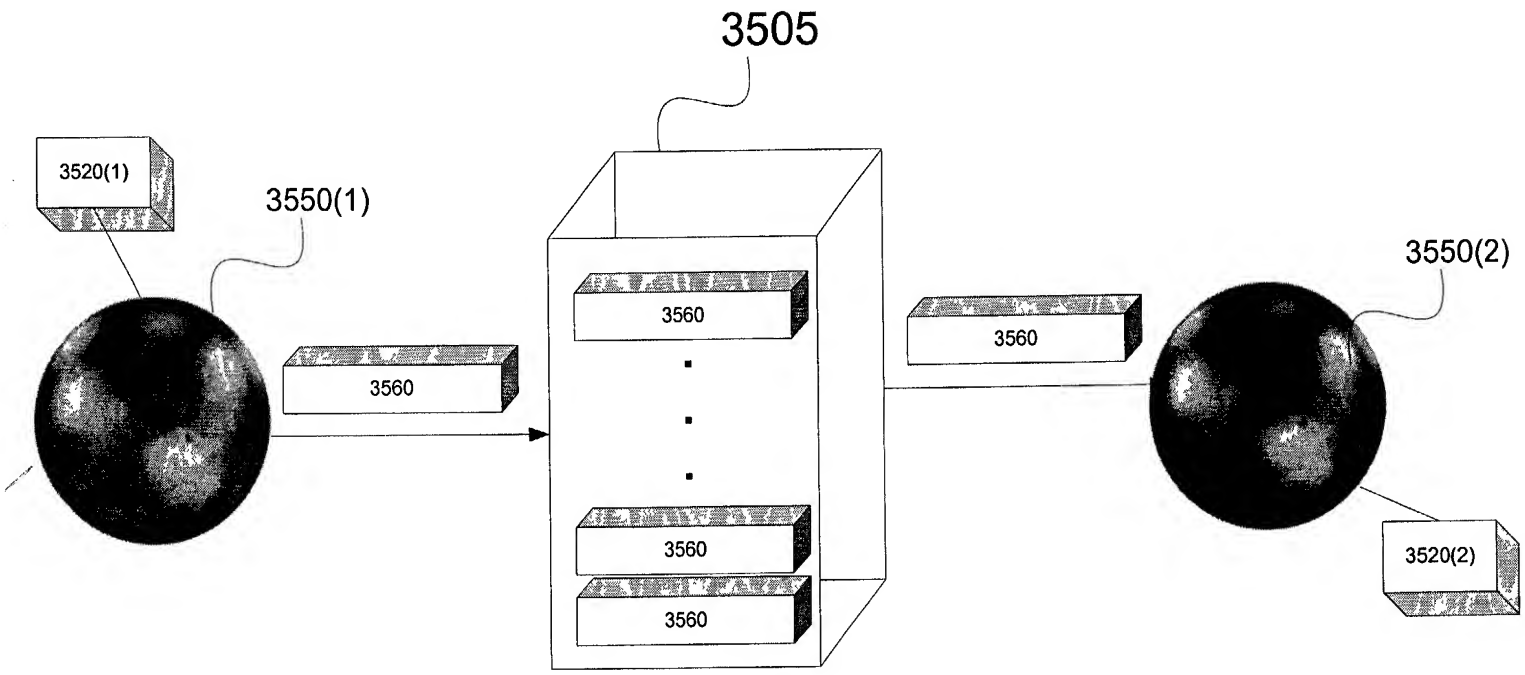
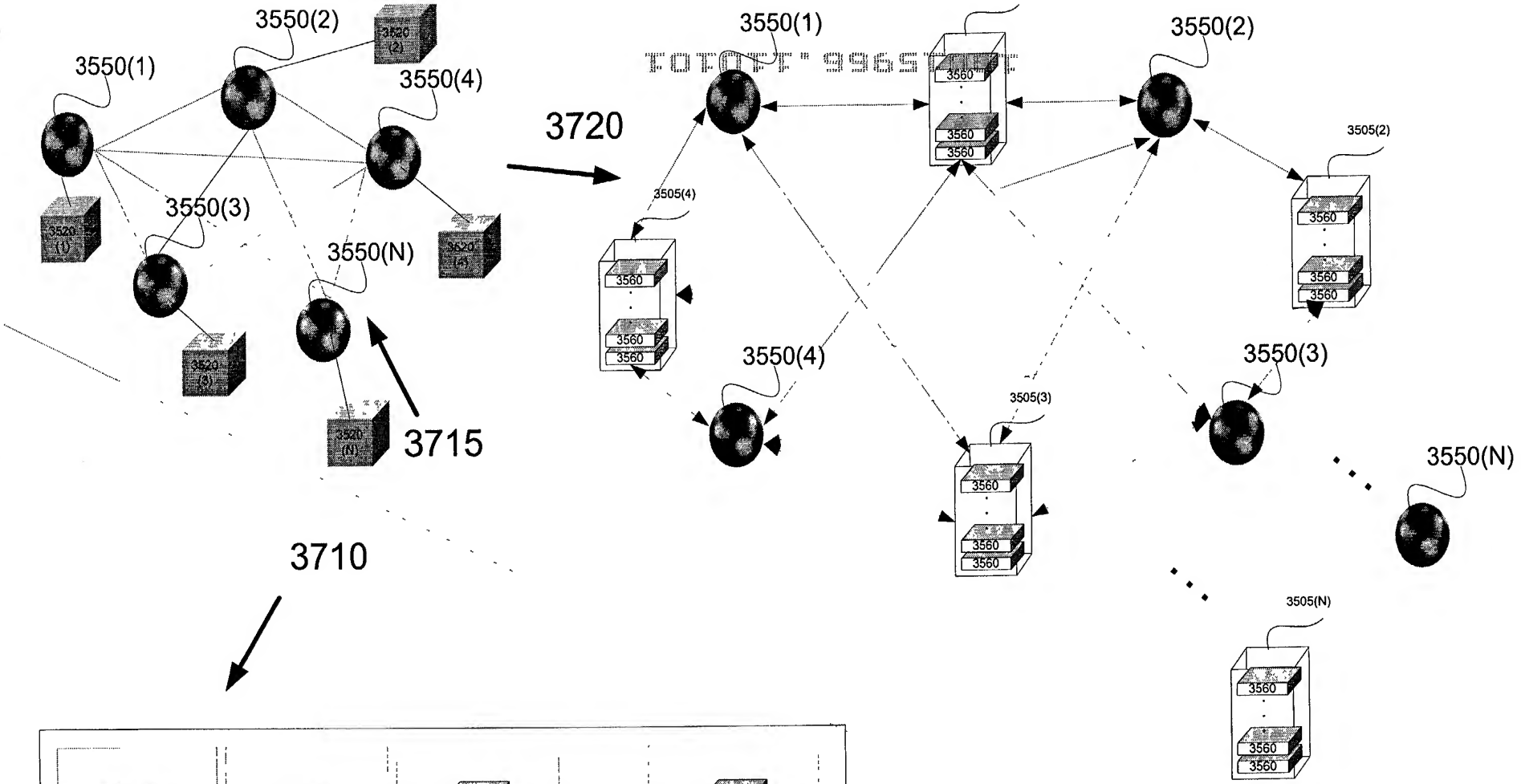


FIG. 36


3550(1)
3550(2)
3550(3)
3550(4)
3550(N)
3520 (1)
3520 (2)
3520 (3)
3520 (4)
3520 (N)
3715
3720
3505(2)
3505(3)
3505(4)
3505(N)
3560

3710

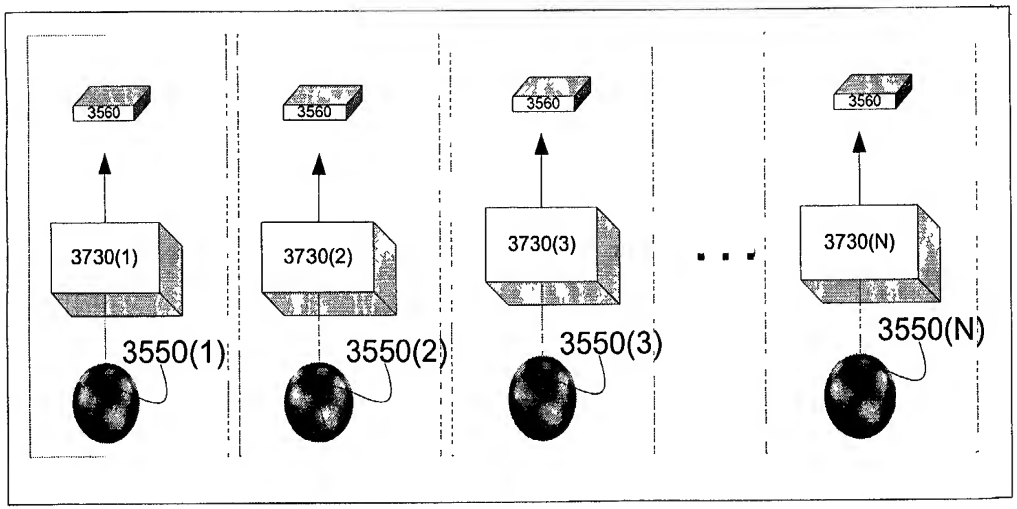

3560
3730(1)
3730(2)
3730(3)
3730(N)
3550(1)
3550(2)
3550(3)
3550(N)

FIG. 37